

Comprehensive Cancer Care: Integrating Complementary & Alternative Therapies
Timeless Healing: The Role of Belief in Cancer Treatment
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Dr. Benson: Thank you, Dr. Gordon. It is a pleasure to be here this afternoon, having the opportunity to share some of our ideas with you. I would also like to thank two friends who helped sponsor this conference, Mr. and Mrs. Arman Simone. Thank you for all you have done for this work and for this conference.

I would like to give you an overview of some 30 years on how we've come to feel that the separations between mind and body, east and west, amongst medicine, science, spirituality and healing, really don't exist, and that science can show us how all of these come together. And that's what I would like to do. These ideas are not theories as much as the result of scientific proof.

I will first give you an overview of how we now view medicine – that is of a three-legged stool. Second, I will give you the history of the relaxation response, and then describe the power and biology of belief, and how so many of the medicines that we're looking for to heal ourselves, that do indeed frequently help, work because of our own belief system.

The most powerful belief system, for 95% of people in America, is that of belief in something beyond us, in a religious-based spirituality. So it's no wonder that that kind of belief can have particular healing effects for believers. For those who don't have that kind of belief, their own belief system can act similarly. In so doing, the distinctions that I just mentioned – mind-body, spirituality, health, healing, science – will disappear. We can speak about one form of medicine without these rather foolish debates about what works and what doesn't based on science, because science will show us what truly does work.

Now let's view health and well-being as being akin to a three-legged stool. Picture it here, being held up by one leg of pharmaceuticals, a second leg of surgery and procedures. Now, most of us feel medicine involves approaches that are either drugs or surgery and procedures. What we're leaving out is a third leg. That third leg is self-care, and that self-care leg helps us treat disorders related to stress and mind-body effects. Sixty to ninety percent of visits to doctors are in the mind-body stress-related realm, where the first two legs of the three-legged stool do not work, whereas the third leg does. And in that third leg we have relaxation response, nutrition, exercise, stress management, and of course the belief system of the patient.

That third leg is not alternative medicine, for several reasons. First of all, elements of the third leg are scientifically proven, whereas elements of alternative medicine are not. After all, if they were proven, they'd cease being alternative. Secondly, alternative medicine is really akin to the first two legs because they're done to you. There's little difference in this context between an herb and a pharmaceutical, between homeopathy and a pharmaceutical, between acupuncture and massage and surgery and procedures – they're done to you, whereas the third leg is self-care. And thirdly, and very importantly in today's context, the third leg offers cost savings – makes sense, and there are a number of studies which have shown that people who engage in programs that teach that third leg reduce their visits to health maintenance organizations, capitated prepaid systems. Such reductions in visits are indeed money in the bank in a prepaid system. In contrast, the data now evolving is that people, when they generally engage in alternative medicine, don't stop their routine care. It's additive, and is therefore cost-additive rather than cost-saving. So what I'll be speaking about is not alternative medicine but rather self-care. And although I'm going to really emphasize self-care, and particularly the mind-body effects, there's no way I can conceive of a medicine without the first two legs.

Let me give you an example. About four years ago or so on Halloween evening, I was walking around my house, which has ceiling vents for air conditioning, covering them with bits of plastic. After finishing my task, I was walking to my shower, just with my towel on. I looked up in the kitchen and there was some tape peeling off the kitchen vent. And I said to myself, oh, you're being compulsive, leave it alone. I looked up, and thought no, the chair is too unstable, don't stand on it. Well, I didn't listen. I did. The chair scooted out from me. I went flying. The towel flew off. I hit the long edge of our butcher-block table in our kitchen, and was there on the floor. And the pain was absolutely terrible.

I was there writhing. My wife heard the noise, came in, and said, "What are you doing?" So I said, "Oh it's nothing. I was foolish. I stood on the chair, and it's just fine, don't worry." But the pain wouldn't go away. I couldn't breathe, and she said, "Should I call a doctor?" And I said, "No, better call our neighbor," who is a doctor, so she called him. He wasn't home. Then she said "911?" I said, "Yes." And she looked, she called them, and waiting a moment or two – they were there within three minutes – she looked down at me and said, "Would you like to put on some underwear?" So I did, and they came in. The pain was absolutely devastating.

I said, "Look, take me to the Deaconess Hospital." And they said, "Doc, you're not going to make it. We have to take you to Leahy Clinic." So I knew I was in trouble, and I wanted something good to come out of this. So I called my wife closer, and she came closer. I called my wife closer, yet closer, and finally said to her, "Hon, this is worse than childbirth." Well, in a split second, I am talking about a millisecond, all compassion drained from her face, and what came out was, "How would you know?" So I knew I was in deep trouble. What had happened was that I had broken five ribs, my lung had collapsed, my chest had filled with blood and fluid, and I was developing what's called tension pneumothorax. If it continued, the other

lung would collapse too under the pressure, and I'd die. Well, they diagnosed that very, very quickly, put a tube into my chest, sucked out my chest and saved my life. No amount of mind-body could have helped me. I mean that. Let us not forget, as I emphasize these mind-body approaches, the vital role of the medicine we now practice. It is awesome. In 10 to 40% of cases, we can treat and cure. And that's why I believe we really need a physician in every encounter to start things off, lest we overlook something that can be readily cured.

I'm a cardiologist, and during my training as a cardiologist I became intrigued with high blood pressure, and especially the high blood pressure I was finding in my office, and then overmedicating, and in the people coming back with too low blood pressure, hypotension. I felt it might be related to stress. This was in the middle 1960's. Stress was not considered to play any part of any disease, and I decided to go back to Harvard Medical School, from whence I had graduated, to see whether or not we couldn't establish a model for stress-induced high blood pressure. We were able to train monkeys using what was then called operant conditioning techniques, subsequently to be called biofeedback, to actually control their own blood pressure on cue.

Back in 1968, some young people came to me and said, "Why are you fooling around with monkeys, why don't you study us? We think we can effectively lower our blood pressure. We practice transcendental meditation (TM)." And I replied with the 1968 equivalent of, "No way." I was already on the edge. I was told I was throwing away a very promising career to look at something like stress. It just was unacceptable.

High blood pressure was caused by the kidneys. That was all there was to it. So I told the TM people no. They kept coming back; I kept saying no. Finally, I said, "Why not?" and in the middle of the evenings, I brought them in through a back door, very quietly. No human

studies consent was necessary – these were days before they existed – and I made a series of studies before, during and after the practice of meditation. At the same time, Robert Keith Wallace and Archie Wilson in California were doing their studies. By pure chance, our experimental studies were exactly the same. The design was the same. Wallace came back to Boston to join me. We were able to collate our data, and define the physiology of meditation, of transcendental meditation. The changes were dramatic.

I'll show you something we did in a comparable experiment. When we would bring people to the laboratory, we'd instrument them with intravenous, intra-arterial lines, electrodes across their chest to measure their electrocardiogram, on their scalps to measure their electroencephalogram, masks to collect their outbreath to measure oxygen consumption, metabolism, and also carbon dioxide elimination, respiratory rate. We found, in this and related procedures, that there was a decrease during the phase when they were meditating or focusing their breathing, of between 12 to 17%. From rest – the simple act of changing their thinking led to a decrease in metabolism. There was also a decrease in their carbon dioxide elimination, which went along with that, a decreased respiratory rate, here of 25%, from a normal of 16 breaths per minute to about 10, 11 breaths.

Later, the work of Dr. Greg Jacobs showed what happens to your brain when you simply focus. These are Harvard and other city of Boston students, in college, who had never before elicited this response. They came, had electrodes placed on their brains. The little white dots you see, the white squares, are their electrodes, and there are 16 of them. From them you measure the electroencephalogram, and you get a series of waves out of that. Those waves are very difficult to analyze because you have to measure the area underneath those curves, and the way to do that is a mathematical formula called fast fourier transform. It used to take a

mathematician almost a week to do one of them, but with computers, they're almost instantaneous. In turn, what he was able to do was to then translate the amount of a certain kind of wave, beta percent power, which he was measuring. This is your everyday thinking, what you are doing now.

Then we took the control group, had them listen to a tape which simply talked about this focusing procedure, measured it in about 10 minutes – no change. But we gave them a tape which then had them bring forth this response for the very first time, and we measured it again. There are dramatic physiologic changes in the amount of beta percent power brain waves which occur the very first time you think this way. That was statistically significant in the frontal lobes of the brain. When you engage in these focusing procedures, this is what happens to your brain. It's physical. Then we found that this is very different from sleep. You see the changes of the relaxation response occur, that is this focusing procedure, within three to five minutes, last as long as you think about it, and then return to normal. Over sleep it occurs over three to six hours, and then back to normal.

The very room in which I was working was the room in which Walter B. Cannon had defined the fight-or-flight response some 60 years before. It was one of those wonderful historical accidents. It made no sense to us that transcendental meditation would be the only way to bring about these changes. It would be as if to say there was one way to perspire, or one way to increase one's heart rate. So what we then did was go back to TM and ask, "What are its basic steps?" And at first we felt there were four, then we found there were two. And these two were, first, a repetition, repetition of a word, sound, prayer or phrase, and second, when other thoughts came to mind, to passively disregard them, and come back to the repetition.

Using that formula, we went back to the religious and secular literatures of the world to see whether or not these two steps had been described. It was truly dramatic. In every culture of humans that had a written history, these two steps were there, mostly within a religious context. The earliest we found came from the Upanishads, dating to the 7th-8th century BC, where it was written, to achieve a union with God, focus on your breathing, and on each out breath repeat silently to yourself this word, this sound, this phrase from the scriptures, the Upanishads, Bhagavad Gita, even the Vedas. Should other thoughts come to mind, passively disregard them and come back to the repetition.

We found exactly the same within Judaism, dating to the time of the second temple. In Christianity, dating almost to the time of Christ, where the instructions were, amongst the desert fathers in the second, third and fourth centuries, focus on your breathing, and on each outbreath, repeat the word Jesus, as you experience love, disregarding other thoughts when they came to mind. Ultimately within Christianity this was codified in the 14th century on Mount Athos in Greece, where to this day there are hallowed Greek Byzantine monasteries. The instructions became twice daily, to focus on your breathing, and on each outbreath repeat the prayer, Lord Jesus Christ have mercy on me. When other thoughts come to mind, disregard them, come back to the repetition.

These steps have survived into modern Catholicism, Episcopalian, Anglican, Presbyterian thought, and is currently called the Jesus Prayer, the Prayer of the Heart. We found exactly the same instructions but different words in Shintoism, Taoism, Confucianism, Islam – only the words differed. In the more so-called primitive religions, people would achieve this same state by fixed gazing or chanting, in time to the beating of the drum or the stamping of feet. Thoreau, Emerson and Alcott achieved this in Concord, Mass., with fixed gazing at light as it

showed through leaves. Wordsworth described this beautifully in his poem, “Reflections by Tintern Abbey.”

Procedures evolved which brought about these same changes – autogenic training, progressive muscular relaxation. So we went back to the laboratory, had people focus on the number one, and found changes indistinguishable from those of transcendental meditation. This now was science. This was a mind-body technology. If you thought in a certain way, measurable, predictable, reproducible physiologic changes would occur. This was akin to all you would expect of a drug, or surgery. We took that mind-body technology back to the clinics, added nutrition, added exercise, added stress management, and the belief system of the patient, giving the patient a choice of which word, sound, prayer or phrase he or she would use. If we had simply one technique and it was, for example, “Hail Mary, full of grace,” it would work. It worked even in Jewish people, but it wouldn’t work as well as Shalom, or Shema Israel, so we gave people a choice – religious, secular, exercise, sitting.

We found, as did other laboratories in a number of different diseases, that these practices worked. For example, Alice Domar is now having 42% pregnancy rates in infertile couples with the same approach – relaxation response, nutrition, exercise, belief system of the patient and cognitive restructuring. We can effectively treat PMS. We can effectively treat the hot flashes, reducing both severity and frequency, in menopause. We can treat the symptoms of cancer and AIDS. Ann Webster won the AIDS Action Committee Award because she can effectively treat the nausea and vomiting of chemotherapy with these approaches.

How many of you have trouble with sleeping, falling asleep, with insomnia, when you’re under stress? Could I have a show of hands? The work of Greg Jacobs is now curing 75% of insomniacs. And we can treat general symptoms.

You can use this mind-body technology, this third leg of self-care. It's now readily accepted within medicine. But from the very first descriptions of the relaxation response, people said, "Oh, that's nothing but the placebo effect. It's all in your head." And I said, "Wait a minute, wait a minute, what is the placebo effect? What are we talking about?"

Let's go back some 25 or so years, when we first started to think about the placebo effect. Placebo is a Latin word meaning, "I shall please." Over the millennia it's had lots of meanings. Initially, placebo was part of the vespers service. In Middle English a placebo was an unctuous, subservient, pandering type of person, a Uriah Heap type character. It wasn't until 1911 that placebo was defined with our current meaning, and that appeared in the Oxford Dictionary. Placebo is an inert, inactive substance used in the place of an active substance. Bread pills are placebos, sugar pills are placebos, sugar injections, salt injections, water injections, are all placebos, and what comes from placebos are placebo effects.

They are exceptionally powerful. We know this because in a number of scientific studies, what we have done is taken a new would-be active drug and compared it to a placebo. Say they are both 60% effective. We throw both out. Why? Because the new drug was no better than a placebo. We rarely ask the question, "What's causing the 60% effectiveness?" Going back to that literature, you can see that there are a number of different disorders in which placebos are effective to the tune of 60 to 90%. These include anginopectoris, bronchial asthma, herpes zoster – that is cold sores – duodenal ulcers, all forms of pain – back pain, head pain, abdominal pain – fatigue, dizziness, impotency, weight loss, cough, constipation, all affected. Congestive heart failure, nausea and vomiting during pregnancy, rheumatoid arthritis, postoperative swelling.

Let's discuss a few examples. Postoperative swelling. Dentists in England used to use an ultrasonic wand that they would wave over people who had their molars pulled, and they found it was working. Some doctors didn't believe in it, so what they did was unplug the wand and still wave it. People still got better. Then they went further. They had the unplugged wand waved either by a dentist or an assistant. When the unplugged wand was waved by the dentist, people did better than those who were waved by the other person. Having a professional do it paid off more.

Hypertension, diabetes mellitus, degeneration of heart muscle, false pregnancy – pseudocyesis. If women believe, (it occurred in even one man!), if they believe they are pregnant, there'll be abdominal swelling, breast enlargement, areolar darkening, nipple darkening, progressive enlargement of the abdomen, milk secretion, and at nine months, labor pains, and there's nothing there. Mary Tudor went through this twice – clearly a mind-body effect.

Deafness. In the recent Japanese earthquake, in Kyoto, a woman heard her trapped neighbor crying out. She went to him, and there he was covered in wreckage, and he said, "I'm okay, go and help someone else." She did, but as she left a fire broke out around him, and she heard him scream to death as he was burning. She became deaf and could not hear. Her ears were fine, but she could not tolerate another sound and deafness ensued.

Death itself, death itself can come from one's belief system. If you believe you're going to die, for example, in voodoo death, and a hex is placed upon you, you will die. The late Dr. Ned Cassem, Professor of Psychiatry at Harvard Medical School, did a study of patients who thought they were going to die during surgery. Of those who were convinced they were going to die, 100% did. He then went back and looked at them, and these were people who down deep

wanted to die. Recently they lost a spouse, a loved one, a companion, and they wanted to be back with them. Beliefs can keep you alive. Thomas Jefferson and John Adams both died on July 4, 1826, the 50th anniversary of the signing of the Declaration of Independence. Jefferson's last words were, "Is this the fourth?" Whereas John Adams, who was very competitive and especially with Jefferson, his last words were, "Doth Tom still live?"

We know the components now that make up the placebo effect, that bring it about. The first is the belief and expectancy on the part of the patient. Let me give you an example. Japanese students allergic to the wax of a lacquer tree were blindfolded. It's like our poison ivy. One arm was stroked with lacquer tree leaves; the other arm was stroked with chestnut tree leaves. The arm stroked with the lacquer tree leaves, but that were believed to be chestnut tree leaves, did not break out in a rash, whereas the other arm stroked with the chestnut tree leaves, believed to be lacquer tree leaves, broke out in a rash. Here it wasn't their wax, it was their belief that was causing it.

What about the belief on the part of the caregiver? Angina pectoris is a constrictive heart pain, chest pain, sometimes radiating to the left arm, hand, to the jaw, brought about by exercise, emotion, overeating, excessive work to the heart, and relieved by rest and nitroglycerin. That diagnosis has not changed in over 200 years, being first defined by William Heberden, an English physician, in 1774. So we know over 200 years that angina is the same. A number of therapies have come along from angina that are bizarre – cobra venom, Vitamin E, xanthines, aminophyllin, bizarre surgeries, sham surgery, tying off the internal mammary artery, putting the internal mammary artery into a tunnel in the heart. They don't work, but, when they were believed in by physicians, they were 70 to 90% effective in the treatment of angina pectoris.

Dr. David McCallie, Jr. and I reported this study in *The New England Journal of Medicine*. Not only would the pain disappear, but the electrocardiogram normalized, and their exercise tolerance improved. Later these were all debunked in double-blind studies, and physicians no longer believed in them, and the effectiveness dropped to 20 to 30%. This phenomenon led a 19th-century French physician, Armand Trousseau, to comment, "Use the new therapies as quickly as you can, before they lose their power to heal."

What's also important is the belief that comes from the relationship between the patient and the caregiver. There was a study done at the Massachusetts General Hospital, where people undergoing surgery were matched with respect to age, sex, severity of their disease, kind of diagnosis, kind of surgery they required. They were divided into two groups, a control group and an experimental group, both groups essentially equal. The one group was seen by the anesthesiologist the night before surgery in a very cursory, purposely almost rude fashion. "My name is Dr. so-and-so. Tomorrow I'm going to give you anesthesia. Don't worry, everything's going to be all right. I'll see you later. Goodbye." The other group was seen by the same anesthesiologist in a warm and sympathetic fashion. He or she sat on the patient's bed, held the patient's hand, told them exactly what to expect in the way of pain and suffering, and worked assiduously to establish a warm and sympathetic contact. Next day they were operated upon, cared for by staff who either didn't know the study was going on or if they did, did not know to which groups the patients belonged. Both groups were allowed to have as much painkilling medication as they required. When the code was broken, those who were treated in the warm and sympathetic fashion required half the amount of medication, and on the average were discharged 2.7 days sooner than the other group. A simple act translated into results.

We can say with a degree of surety, that prior to 150-160 years ago, the history of medicine is the history of the placebo effect. We had nothing in scientific terms. What survived? The bark of the cinchona tree for quinine. Little else. People were undergoing puking and purging and cupping and leeching. They were having bizarre substances given to them, put on them – bear's fat, eunuch fat, moss from the skulls of criminals hung on London Bridge. Their moss was thought to be particularly efficacious in the treatment of scrofula of the neck, and people were getting better. They were getting better not because of the puking or the purging or the moss but what they believed in.

Scientific medicine then came along with its wondrous cures. Koch and Pasteur discovered bacteria and were able to define that certain diseases are caused by bacteria, for example, tetanus. Tetanus was killing people by the millions in Europe. Robert Koch came up with antitetanus toxin, and if you were punctured by a rusty nail and about ready to get lockjaw, and you were given antitetanus toxin, you wouldn't. You didn't have to believe in it, the physician didn't have to believe in it. It could be given to you by a warm and sympathetic person or a churl. It worked. It was independent of the placebo effect.

And anti-diphtheria serum and various vitamins were used, with beriberi, scurvy, rickets, pelagra being cured. From Canada the insulin for diabetics came along and juvenile diabetics could be kept alive. Then in London, Alexander Fleming went on his holiday and left some bacterial plates out, petri dishes out, came back to find them covered with bacteria except where there was bread mold, where the bacteria weren't growing, and penicillin was discovered. Pneumonia, syphilis, gonorrhoea became curable. Waksman at Merck, Sharp and Dohme and Rutgers discovered streptomycin and tuberculosis became curable.

When I was in medical school, over half of the hospital beds in the United States were occupied by tuberculosis patients. Well, the placebo effect absolutely paled in comparison to these awesome cures of modern medicine. In 1910-11, the Flexner Report was written and allopathic medicine differentiated itself from homeopathy, hydrotherapy, naturopathy. Allopathic medicine said, “We’re different. We don’t need ‘the placebo effect,’” and we turned it into a pejorative. It’s all in your head, nothing but a dummy pill. So we became wedded just to those first two legs of the three-legged stool. But we cannot rely only on those first two legs. We have to incorporate that third leg with belief system.

But how is it possible that your belief in a therapy can turn a rash on and off? Or can do away with swelling of rheumatoid arthritis? Or do away with angina pectoris? Can keep you alive? How many of you know of people who have lived for an anniversary, for a wedding, for a birth, against all odds? Could I have a show of hands when that occurred?

Well, how does this occur? Here’s where things really get to be fun. Our brains have about 100 billion cells within them. Each of those cells branch, branch, branch, branch, branch, arborize, arborize, arborize, into twigs. So each cell has within it as part of it between 5,000 and 500,000 nerve endings, each of which communicates with another nerve ending. They don’t touch. There’s a gap between them. That gap is called a synapse. The way they communicate is through what makes sense, a neurotransmitter – lots of neurotransmitters – endorphins and kepholins, epinephrine, norepinephrine, serotonin – 60, 70, 80 neurotransmitters are there.

The neurotransmitters at each synapse aren’t all or none as they go across that gap. It could be a little squirt or it could be a whole wad squirted out. For sake of calculation, let’s say there are 10 gradations at each synapse of each neurotransmitter, which is an underestimate.

Every single millisecond of your life there is the potential of ten to the hundredth trillion power of messages being passed back and forth. Ten to the hundredth trillion power.

The person you are this millisecond is not the person you were a millisecond ago, or that you'll be a millisecond in the future. Even if you're not listening to me. "I've got to go to the bathroom. What's he talking about? This isn't what's supposed to be going on now. The program's late." Whatever you're thinking about is changing you. So you're changing every single second. And every motion you make, every thought you have, every memory you have is wired. Some of this stuff is hard-wired, there from birth, because we're humans.

How many of you are fearful of snakes, show of hands? About a third to a half of you. That goes back 50 million years, when we were little furry things, and our enemies were these giant 60-foot snakes. It's still there. Look what happened to me when I was planting tulip bulbs a few years ago at our home. I was sure that the squirrels were watching me, because they were there the second I was there. I didn't want to use dried dog's blood, there's something that bothers me about that, so I thought, why not buy an inflatable snake? So I bought an inflatable six-foot snake, put it down, and it took care of the squirrels, but I forgot about it. Next spring, raking, I screamed, I jumped – "A snake! What the hell's a snake doing here?" The basic fear.

Fear of heights. If we took a piece of Plexiglas and extended it out here, clear Plexiglas, so that it was okay, safe. Put a six-month-old who can crawl at one end, put mommy at the other end and say, "Come on, honey, come on, honey!" He or she would crawl to this edge and stop – inherent fear of heights. We have stuff within us that we remember. It's part of us. Part of it's wired.

We watch kids evolving with stories that they have, for example, as little kids put their thoughts together. At the Beth Israel Hospital a number of years ago I was there in the cafeteria

and a three-year-old girl came up to me. She pulled on my coat, pointing to a dumb waiter saying, “Doctor, doctor! I know what that is. “ So I said, “What is it honey?” and she proudly said, “That’s an elevator for children!”

We go through life. We have things within us. When I was an intern in Seattle, an Oriental patient came in I had never seen before. It was a walk-in clinic, and I looked up at him and the first moment I saw him, I panicked. I was in a fight-or-flight response. It was full-blown. I was perspiring. I wanted out. I quickly got hold of myself, saw him, he was fine. Then I said to him, “Look, I had this reaction. It’s weird, could you explain it to me?” He smiled and said, “Heh, heh, heh, heh, okay Yank, now you die.” He was a Filipino gentleman, who in the Second World War was enlisted by Hollywood to play Tokyo Joe. The villain went to Stanford, spoke perfect English, shot down his roommate. He went on to become the villain in the Charlie Chan movies. I was wired as a five-, six-year-old, with that face. I couldn’t remember who he was, but seeing him turned on my fear as a five-year-old. You see someone you like, someone who said, “Nice little boy, nice little girl, here’s a cookie.” You see someone who you want to get away from – “Get out of here, brat.” We build up things over our lives and they influence us. They influence our health and well-being.

Take the example of my mother, bless her. She died recently. She was 95 years old. Mom was of the Orthodox Jewish faith. She came to this country and really disguised her age from time zero. We think she was older, but the best we could come up with is somewhere around 95. When she was 85, she was still playing golf and she developed aortic stenosis. Aortic stenosis is a narrowing of the aortic valve. It blocks blood flow, frequently blood flow to the brain, and you can faint or you can die. Sometimes the first symptom is death. But more often, it’s simply fainting.

My mother was fainting on the golf course, but refused an operation. Finally her golf partners convinced her it was an appropriate thing to have, not because they cared about her so much, but they were tired of paying for the repair fees of the ambulances chewing up the turf as they came across the golf course. She went to a top flight New York hospital, and I was there when the young doctor came in to explain. He didn't know what he was up against. "Hello, how are you? You have this operation tomorrow. How old are you?"

"How old do you think I am?"

"You might have a stroke, you might lose your legs, you might...."

"I don't want to hear this. Get out of here. I don't want to sign anything. Just do the surgery. Get out!" Finally he left her. Next day she underwent surgery, had an artificial valve put in, a pig valve, a porcine valve, and it was a humongous course. She not only had a pig valve placed in, but she had four or five bypasses, so her legs were opened up to put in the bypasses. Postoperatively she bled, requiring 22 units of blood. They had to reopen her, drain that, tie off the bleeders. So two operations, 22 units of blood. Two days later she awoke with tubes everywhere. I was there, and I said, "Mom, Mom, how are you doing?" And she said, "Terrible, terrible, terrible." I said, "Of course, terrible, look what, you know." She pulled me down towards her, and she said, "Pig." That's all she cared about. I got a rabbi, who blessed the valve. And she perked immediately. She was up and about within days.

You've got to pay attention to the belief system of patients. It's vital. We're all different. We've got to pay attention to what each one of us believes. So we should choose the relaxation response appropriately, we listen to what people have, and we can add a great deal to our therapies, by paying attention to these various three steps.

But there are a lot of things where belief doesn't matter. Where we've got to pay attention to our modern medicine, for immunizations, for anesthesia for surgery, surgery for traumatic injuries, dentistry, antibiotics, cataract removal, hearing aids for hearing loss, vitamins for disease caused by vitamin deficiency, hormone replacements, prosthetic limbs, joint replacement, drugs for congestive heart failure, cardiac arrhythmias, lymphomas, mood disorders, schizophrenia, pain alleviating drugs for acute pain. These all work, independent of belief system. Artificial heart valves, cardiac pacemakers, cardiac defibrillators, blood and plasma transfusion and organ transplant. They work.

But what we've got to do is add to these wonderful therapies that third leg, which incorporates in part our belief systems, and the placebo effect. We've got to change the name of the placebo effect, because it's too pejorative. In our heads it has become a pejorative. We have turned things on their ear. A woman patient, suffering from vague symptoms, going from doctor to doctor, finally is diagnosed after five or six doctors as having multiple sclerosis, and is no longer told it's in her head. She thanked the doctor. She would rather have a life-threatening disease than have this "it's all in your head." So have we turned this about. "All in your head" should be a positive thing that we could add to our therapies.

How does this work? Look at the experiment that one of my colleagues, Dr. Steven Causlin, did. He's a professor of psychology at Harvard University. He had people stare at a grid. Within that grid was the letter A, capital letter A. They stared at it, stared at it, stared at it, and then did a PET scan. A certain area of their brains lit up, back in the occipital cortex. Then he had them stare at another grid. Within that grid there was no letter A, but he had them visualize a letter A within it and did another PET scan. Exactly the same. In other words,

whether you are actually looking at something or visualizing it, from your brain's point of view, it's a reality.

You have memories of what's there and you can visualize things and make things as if they're there in reality. Now you have a memory of a headache, and if I'm here saying headache, headache, headache, how many of you have a twinge of a headache, honestly? About a third of you. Why? You've got a memory of a headache. I'm reminding you of it. As you can remember things, rashes, joint swellings, you can remember to be without the asthma, without the angina, without the pain. And rather than calling it placebo effect, let's rename it, and call it "remembered wellness."

Now let me close with this. What does God have to do with all of this? Ninety-five percent of Americans believe in God. Ninety-five percent. The most powerful belief people have is God. Is it a wonder then that a faith healer would work? For many people, this is the most powerful belief that exists, that can bring about remembered wellness. This brings us to this win-win situation. Viewing such belief, such spirituality from a very narrow point of view, from the viewpoint, "Does it heal or not?" Say you believe in God, you have an illness, that belief cures that illness, and God doesn't exist. You're still healed. Let's assume you believe in God, you have an illness, that illness is healed, the belief cures that illness and God *does* exist. That's wonderful. That's terrific. From a very narrow, physician's point of view, it's win-win.

There are elements to spirituality that so far transcend just healing, that have nothing to do with what I'm talking about and that I honor. As humans, just as we're wired for fear of heights, just as we're wired for fear of snakes, for memories, so it would appear, going back to historical literature, we're also wired to believe in something beyond – energies, forces, powers, God if you will. That's important to us. Why? Being the most intelligent species on earth, we

knowing we're going to die, and no other species knows this. Even kids are getting to be more aware of death, with the shootings and what have you. That knowledge of death isn't good for us. Why go on? Why have children? Why suffer? It's not good for evolution.

But if we are wired to believe in something more, which is apparently the case, then that's good for us. It gives us hope. There's something more. There's something to live for. And as I was saying, just as we're wired for certain fears, so we are also wired for God. I think it's wonderful. For those who don't believe in God, believe in belief itself. In so doing you're going to do away with these distinctions which scientifically do not exist. Distinctions that have made fun of mind-body connections, of east versus west, and of religion, spirituality, health and healing. And in so doing, you'll be using a scientific base to do so. As a result, you and many others, I believe, will be healthier and happier. Thank you.