

A DAY WITH WALLY SAMPSON  
HERBAL HOPE  
ADJUSTING THE JOINTS  
NEEDLES AND NERVES  
HEALING TOUCH

A DAY WITH WALLY SAMPSON

ALAN ALDA (NARRATION) America the melting pot is also America the crossroads for ideas about healing. We have a huge range of alternatives for medical treatment available to us. That presents people like Wally Sampson with all kinds of difficulties. He's a retired oncologist and Stanford Medical School professor, but he's still hard at work.

ALAN ALDA Hi. Good morning...

WALLY SAMPSON Ah, good morning, Alan. Come on in.

ALAN ALDA Thanks.

ALAN ALDA (NARRATION) Wally started a journal to do what he says we all should - look at alternative medicine with a cool, scientific eye. But given human nature, that's easier said than done.

ALAN ALDA I know people who started out thinking, for instance, that acupuncture was foolishness. I mean, how could there be these meridians in the body and Qi coursing through your body? How could needles have any effect on it? Then they got desperate because they're in pain. Then they went to an acupuncturist and felt relief from their symptoms. And they went from being highly skeptical to now recommending it to their friends. What happens there? What's going on there?

WALLY SAMPSON That's a very deep experience for people. It's almost like having a transcendent or a religious discovery experience. When two events occur in close proximity, one beforehand is always interpreted as having something to do with the second one. Now the trick is to tell the difference between what really was the cause and what was the natural history of what was going to happen anyway. And most of the time, what was going to happen anyway, when you're really sick, is you get better. Eighty percent of the time, no matter what it is, whether you have back pain or whether you have the flu, whether you have even a pneumonia -- most people get better from pneumonia, not everybody dies. Even some cancers seem to stop growing for awhile or may

remit. But the natural way to think about these things is to tie up whatever you did just beforehand with the results. So, that's the way people are.

ALAN ALDA (NARRATION) How to solidly connect cause and effect is the central question in a scientific approach to healing.

ALAN ALDA Shall we see what's in here?

WALLY SAMPSON Sure.

ALAN ALDA Hello.

DENNIS ZENG Hi.

ALAN ALDA Hi.

ALAN ALDA.

DENNIS ZENG Dennis.

ALAN ALDA Hi Dennis. Nice to meet you.

DENNIS ZENG Yeah.

ALAN ALDA (NARRATION) This is a typical Chinese herbal medicine shop, as you'll find all over China and the Far East. It's stocked with around 300 different herbal remedies.

DENNIS ZENG You want me to make a package for you?

ALAN ALDA Yeah, why not? It can't hurt me, can it?

ALAN ALDA (NARRATION) Dennis Zeng, the doctor and pharmacist, is making me up a package to treat back pain. He follows a traditional prescription he learned during several years of training in China. The ingredients will be boiled to make a strong herbal tea, as it's known. The result will be a complex mixture of over a hundred different plant chemical components. This particular mixture, like most that Dennis prescribes, has never been studied by science. That's not to say it doesn't work - it's just that we can't be sure, because of the way people often confuse cause and effect, as Wally described.

ALAN ALDA ...two, three, four, five, six, seven, eight, nine, ten ingredients?

ALAN ALDA (NARRATION) Traditional Chinese medicines come mainly from the tropical forests of southern China. They're part of an ancient folk medicine system - with features that scientists find hard to recognize.

DENNIS ZENG Tsong Kay Sa...

ALAN ALDA (NARRATION) Each leaf, or fruit, or tree bark has a specific effect in re-directing the body's energy flows, or Qi.

ALAN ALDA And this over here?

DENNIS ZENG Yeah. Mu Gua. Mu Gua.

ALAN ALDA (NARRATION) Disease is caused by imbalance between Yin and Yang. The way to re-establish the balance - and restore health - is by re-directing the Qi. Although no western-trained doctor would recognize the system, patients don't care. In China most people combine western and traditional cures, and many in the west do the same.

ALAN ALDA Do you find that your customers also use western medicine or do they mainly come for traditional? DENNIS ZENG They also use western medicine, together.

ALAN ALDA Together?

DENNIS ZENG Yeah.

ALAN ALDA Yeah. How would you be treated with...

DENNIS ZENG I just take the herbal tea.

ALAN ALDA Herbal tea?

DENNIS ZENG Yeah, when I got sick, you know?

ALAN ALDA And what if that doesn't work? What do you do then?

DENNIS ZENG Doesn't work? Every time it works.

ALAN ALDA That's good. I'm glad you're healthy.

ALAN ALDA (NARRATION) The popularity of herbal remedies has spread far beyond Chinatowns. There are now thousands of shops like these all over

America. They're part of a \$17 billion industry for what are called "dietary supplements."

ALAN ALDA What kind of things do people tend to buy when they come in?

SUKHEE YOO Nowadays, in the winter season, a lot of people have the flu. Usually the people take Echinacea and Goldenseal. Or a combination.

ALAN ALDA Wally, do you know about, what would you say about Echinacea?

WALLY SAMPSON It's had an interesting history because there's some evidence in test tube work that it can stimulate certain immune cells in the immune system. But, in clinical trials, it hasn't worked as well.

ALAN ALDA (NARRATION) Unlike prescription drugs, supplements don't have to have proven effects. Most of the huge array of products on the market either haven't been tested, or show vague results. For example, a popular cancer treatment - IP-6, derived from plant fiber - may affect mouse cancer cells, but has shown no effects in humans.

ALAN ALDA "Natural substance, IP-6, offers hope as cancer therapy."

SUKHEE YOO This is for good immune systems, so your body will be able to fight against cancer.

ALAN ALDA And do you have people coming in? Is that popular?

SUKHEE YOO Even I take it. Even I take it.

ALAN ALDA Yeah?

SUKHEE YOO Yeah.

ALAN ALDA What if somebody came in and said, "I have a pain in my shoulder. Or I have a muscle pain. Or I have arthritis."

SUKHEE YOO Yeah, those are the products... ALAN Chondroitin?

SUKHEE YOO Yeah, glucosamine-chondroitin combination.

ALAN ALDA Glucosamine-condritin.

SUKHEE YOO Yes, this is one of the most popular products we sell.

ALAN ALDA Really?

SUKHEE YOO Yes.

ALAN ALDA And, do people feel it works?

SUKHEE YOO Even I take it.

ALAN ALDA You take this, too?

SUKHEE YOO Yeah, I take it.

ALAN ALDA We haven't found yet you don't take. You take more than ten pills a day.

SUKHEE YOO Yeah, probably. I take it.

WALLY SAMPSON Do you have anything that people come in asking for for their heart?

SUKHEE YOO Yeah, we have Co-Enzyme Q-10 over here.

ALAN ALDA (NARRATION) There really is no ailment for which you can't find something to spend your money on. SUKHEE YOO Here. Co-Enzyme Q-10 is a very expensive product.

ALAN ALDA Co-Enzyme Q-10.

WALLY SAMPSON Right.

ALAN ALDA What is this? That's a very scientific name. It doesn't sound very natural. It doesn't sound like it comes from a Co-Enzyme Q-10 tree or anything. What is this Wally, what is this?

WALLY SAMPSON It's a simple chemical, organic chemical compound. It's also known as ubiquinone. It's present in everybody's body. But it became a little famous because it's slightly antioxidant but it also has an effect in dog hearts. And a lot of people say it has effect on human heart for heart failure and so forth. But again, a recent study reported in the Annals of Internal Medicine showed that it didn't really help humans.

ALAN ALDA (NARRATION) Maybe what they're really selling here is hope. In our next story, we'll look at a cancer remedy that offered exactly that.

## HERBAL HOPE

ALAN ALDA (NARRATION) This is about a remedy made here, called PC-SPES.

BARRE RORABAUGH PC-SPES is a nutritional supplement. It's for prostate cancer, although we cannot make that kind of a claim. The only claim we can make is that it's for healthy prostate.

ALAN ALDA (NARRATION) So long as supplements do not make specific claims of treatment or cure, they are only loosely regulated. The FDA does not assess vague statements like "for prostate health," but it's usually pretty clear what the message is. In this case, PC means prostate cancer, and SPES is Latin for hope - and people surely want that.

BARRE RORABAUGH A neighbor of mine put his house up for sale one day and I asked him, "why are you putting your house up for sale?" He says, "Barry, I have prostate cancer and I'm going to die in six months." And he said, "I've tried every treatment in the world. I've been to fifteen different doctors and I have nowhere to go." And he was selling his house and moving to a less expensive house so his wife wouldn't have a mortgage. And over the six-month period he literally just became a shell of a man. And he discovered PC-SPES. He was doing some research and started taking PC-SPES. And this was in the '95-'96 time frame and at that time he said, "Barry, this is an interesting company and with this product, my PSA counts are coming down." And so it was about a year later he says, "You know Barry, I'm gonna have to find a job," he says, "I'm going to live." And of course today he's alive and doing very very well. And that is a story that is compounded probably a couple thousand times over.

ALAN ALDA (NARRATION) George Dutra was diagnosed with prostate cancer in 1992. He would eventually take PC-SPES, but not before a long struggle.

GEORGE DUTRA When the surgery was performed I was told that we would take out the cancer, put it in the bottle, put it on the shelf, and that's it, forget about it. But after surgery they found there were still some traces that had gotten into a lymph node. So that wasn't going to be a problem. We could then go to, have some radiation and that would zap it, so. We did the thirty-five treatments of radiation and the count stayed down for a very short time.

ALAN ALDA (NARRATION) George's treatment followed the standard course. First surgery, then radiation, then hormone therapy to suppress testosterone, chemotherapy, and finally second-line hormone therapy. You always hope each new level will defeat the cancer. When the second-line hormones failed, PC-SPES came up.

GEORGE DUTRA My family doctor had read about it and he had called my attention to it. He said you might look into it but it's expensive. And when you're running out of options, yes you do try it. And that's one of the things we were told, too -- we're running out of options.

ALAN ALDA (NARRATION) George's PSA levels - a test which measures the cancer's activity - came down. As Wally Sampson says, diseases can fluctuate on their own, but George believes the PC-SPES was responsible.

GEORGE DUTRA It gave me 8 months or 9 months of PSA that didn't take off, because I had been higher earlier. I have no, ah...I'm glad I tried it.

ALAN ALDA (NARRATION) George's PSA levels eventually started to climb, and he's now back on a conventional second-line hormone therapy. By the mid-1990s, so many prostate cancer patients were taking PC-SPES that urologists here in San Francisco decided they had to conduct a study. For a complex disease, with many treatments, that's quite a challenge.

ERIC SMALL We studied PC-SPES, on the one hand, in patients who had never before had hormones, and were therefore hormone-sensitive. The other group was patients who had already gone through the hormones, had already been treated with drugs that lowered their testosterone to a very low level and despite that, had developed progressive disease. By their very nature, those patients tended to be, to have more advanced disease.

ALAN ALDA (NARRATION) The 33 patients in the first group showed dramatic results. Everyone had PSA drops of at least 80%. Even the second group - patients with advanced disease - did well, with more than half showing PSA drops of at least 50%. PC-SPES was performing at least as well as a standard hormone therapy. It could be a terrific extra weapon in the fight against prostate cancer. So how did it work? One test, to measure testosterone levels in the first patient group, came back with intriguing results. ERIC SMALL We found that, lo and behold, the testosterone level in all of them had fallen dramatically, suggesting that at least one of the mechanisms of action in this group of patients was that PC-SPES was acting as some form of a hormone, eliminating the male hormone testosterone.

ALAN ALDA (NARRATION) This is where things get confusing. PC-SPES is a mixture of 8 natural herbs - 7 from China, one from America. Among the many chemicals in that mixture, was there one which acts like a hormone? Or, somewhere along the supply chain, had someone introduced a hormone like DES? DES, a synthetic form of the female hormone, estrogen, has long been a standard prostate cancer therapy. An analysis had not found DES, so Eric

Small's team decided PC-SPES was promising enough for a large-scale trial. In the spring of 2000, 90 men with advanced disease were enrolled at three centers. The aim was to compare PC-SPES to DES. As the trial proceeded, rumors were flying among PC-SPES consumers. Some patients said it had stopped working. Had the formula changed? Two labs hired by consumers reported finding DES. Then the FDA did an analysis but found no DES. Eric Small's team tested the PC-SPES they were using in the trial, and found a small amount of DES in three of their four batches. So now the trial might just be comparing DES to DES.

ERIC SMALL We've been told by our chemists that this looks like synthetic DES. But what we don't know, I certainly don't know, is whether that could result as a process of the manufacturing of the herbs, of the processing of the herbs, whether it's a supplement -- we just don't know. And in point of fact, we don't know what that small amount of DES does. It's entirely possible that it does nothing.

ALAN ALDA (NARRATION) Nevertheless they decided they had to halt the trial. Meanwhile, Botanic Lab denied having added anything synthetic to PC-SPES. But a few days after we filmed here, analysis of samples by the California Health Department came up with traces of a second prescription drug. The manufacturer finally halted production. The PC-SPES story shows what a challenge it is to get scientifically rigorous results, working with herbal remedies. It's hard to control quality, because plants vary depending on conditions. You don't know what ingredients might be active, and you don't even know exactly what's in them. PC-SPES might still be a useful therapy, but we may never know. And that applies to most herbal remedies on the shelves. Wally Sampson is back at the hospital where he worked. As part of his constant advocacy of clarity and logic in medicine, he now hopes to interest doctors in learning about how to assess alternative therapies.

WALLY SAMPSON Good afternoon. I'm Wally Sampson and I used to do oncology here. I've given grand rounds and another noon conference earlier this year on the subject of alternative medicine. Alternative medicine is alternative at this time because it is not supported by adequate scientific information. I would like to start a small seminar series specifically concentrating on the analysis of information.

ALAN ALDA (NARRATION) I took the opportunity to ask how the growing interest in alternatives affected their work.

ALAN ALDA What do you think is the most important reason for people to be cautious about taking herbal medicines and other alternative cures?



CLIFFORD WANG Drug interactions is what we would worry about the most. Um, you know, we...a lot of the times the patients are taking multiple medications, especially in the elderly population. And then they go to the store and they will buy some herbal product.

GARY VIALE A lot of the times they don't tell us what they're taking because they feel they're buying it in a store, that it must be quite benign. And we, in the medicine side, don't know if it's totally benign. Don't know, in fact that it can or cannot interact. And so we're in a learning curve also to understand these new compounds. They're new to us. They're certainly not new to the world. They're just new to us in medicine.

ALAN ALDA (NARRATION) There are some notorious examples of bad interactions -- causing liver damage, or even transplant rejections. But overall this area is a big unknown. Alternatives do offer hope to patients, but there's false hope too. These doctors see a serious problem with patients ignoring conventional therapies.

STEPHANIE CHEN I think that is one of the harms of the medications, is people see it as an either/or sort of situation. So as an example, I had a patient who was 49 years old diagnosed with early prostate cancer, who... I was trying to convince him to undergo either curative surgery or curative XR-T and he refused and is on herbal medicine and has been doing that for about a year and is doing okay. But I'm pretty concerned about him, you know. And I think that's not only giving him false hope, but probably could lead to him dying from the prostate cancer.

ALAN ALDA Has anybody else had an experience where a patient has turned away from conventional medicine in favor of herbal things and that kind of thing?

PAMELA VIALE Absolutely. Cancer patients. I've had some that have gone to Mexico, gone to clinics down in San Diego, gone for sweat therapy, I mean, colonics, and have absolutely given up chemotherapy in order to try to pursue those avenues. And then come back after they've exhausted that, exhausted their money, found out that they were just getting sicker and that their cancer wasn't going away, and then they came back to us for conventional therapy. It's very sad.

DEANNE YAMAMOTO Sure. I had a very young 25-year-old woman with active rheumatoid arthritis who came in and she wanted to know her diagnosis. So we did blood tests and x-rays and we gave her the diagnosis. And she said, "Well, I prefer to not use any of the traditional medicines. I want to do it herbal." And I just simply said to her, "What can I do to keep the door open?"

ALAN ALDA (NARRATION) It's hard to see how that uneasy relationship between conventional and alternative medicine can change any time soon. Perhaps 60 million people in America use alternative ways to heal, and the number's growing. In our next story, what science has to say about one of those ways - healing through the spine.

## ADJUSTING THE JOINTS

STEPHEN ROWE Drop that shoulder...there we go.

JOHN BADANES And we have a patient here, Paul.

ALAN ALDA Hello Paul. PAUL Hello.

JOHN BADANES And, er, what's your complaint today?

PAUL Oh, my neck hurts.

JOHN BADANES Okay, very good.

ALAN ALDA (NARRATION) John Badanes is conducting a chiropractic examination. He compares the lengths of Paul's legs, and finds a difference. Next, he makes adjustments in the alignment of Paul's skeleton. Paul's leg lengths should become even, with his neck pain cured. John Badanes is a fully trained, experienced chiropractor. But he left the business after 7 years when he realized he had to face up to his profession making no sense.

JOHN BADANES This is an activator. It doesn't involve bone cracking or joint-popping. If I activate it, there is a...

ALAN ALDA It's just a little tap.

JOHN BADANES That's a little tap. In fact, I can adjust that down to...

ALAN ALDA I can't even feel that.

JOHN BADANES That's correct.

ALAN ALDA (NARRATION) Chiropractors adjust "subluxations."

ALAN ALDA A subluxation, is that some kind of displacement of bones in the spine?

JOHN BADANES A subluxation is what a chiropractor defines as a problem.

ALAN ALDA In other words, it's a term that's used in many, many different ways.

JOHN BADANES Correct.

ALAN ALDA Now, historically, when Palmer invented this, introduced this term...

JOHN BADANES Right.

ALAN ALDA ...he was talking, was he about some kind of blockage of some life force that was coming in from the universe?

JOHN BADANES Correct. What he called nerve interference. It was a life force expressed through the nerves and, er that was blocked -- what he called nerve-interference -- and usually by a bony displacement.

ALAN ALDA (NARRATION) Chiropractic - which literally means, "done by hand" - was invented by Daniel Palmer in Davenport, Iowa in 1895.

PALMER'S VOICE Do you want the cause of your disease removed, and get permanently cured in the quickest possible time? Chiropractic relieves pressure on nerves, the cause is removed, and perfect health established.

ALAN ALDA (NARRATION) Palmer, a spiritualist and magnetic healer, said that chiropractic was revealed when he cured his office janitor of deafness. The janitor said his deafness had started when something gave way in his back. Palmer takes up the story:

PALMER'S VOICE An examination showed a vertebra racked from its normal position. I reasoned that if the vertebra was replaced, the man's hearing should be restored. With this object in view...I racked it into position...and soon the man could hear as before. In that adjustment originated the art of replacing vertebrae.

ALAN ALDA (NARRATION) Subsequently a large theoretical structure, and industry, have been built on the basic idea that pressure on spinal nerves causes disease. Palmer believed the pressure interrupts the flow of what he called "innate intelligence," or "life power," from the brain. Nowadays the language may be a little different, but the basic idea is the same.

GERALD CLUM We are concerned about the relationship of the ability of the nervous system to express itself fully throughout the body as it particularly can be interfered with at the spinal level. The chiropractor is concerned about

aberrations in the spine, minor misalignments that may not seem consequential to other providers, that have profound impact from our experience as chiropractors on the health and well being of the patient.

ALAN ALDA (NARRATION) Thirty years ago an anatomist tried twisting cadaver spines around, but couldn't figure out how to obstruct the nerves -- short of actually breaking something. In fact, our vertebrae give the spinal nerves plenty of room. So now, chiropractors say the effect is indirect.

GERALD CLUM The pressure may not be on a spinal nerve route, or the pressure may not be on a spinal cord. But it may a disturbance that changes the musculature, that changes the pattern of cervical spinal fluid movement. It may be a change in the positioning of a vertebra, that begins to compromise and swell, excuse me, compromises a joint level, produces swelling that in turn produces pressure on a nerve route. So the early concepts of chiropractic of being direct nerve pressure have given way to concepts of indirect pressure.

STEPHEN ROWE Hi Kimberley.

KIMBERLEY MAH Hi Doctor Rowe.

STEPHEN ROWE Nice to see you again today.

KIMBERLEY MAH Nice to see you, too.

STEPHEN ROWE So tell me, how did you respond to our last visit?

KIMBERLEY MAH Ah, really good, actually. I was feeling really good after, thank you.

STEPHEN ROWE And since then you've been feeling...?

KIMBERLEY MAH I've been a little sick for about the past week. I've been sick.

STEPHEN ROWE You've been sick? Tell me about that. KIMBERLEY MAH Um, I've got sinus congestion, a little headaches, and fatigue.

STEPHEN ROWE And how are you feeling now?

KIMBERLEY MAH The same. I've still got some sinus congestion, and I'm still tired. It's not really getting any worse or any better. It's staying the same.

STEPHEN ROWE OK, well, I'm glad you're here, and we'll take a look at your spine and see how you're really doing. OK, now we're just gonna feel how your spine is moving so I'm just going to arch, and you can let me feel the motion here. There we go. I'm feeling for her spine to have a free, even motion between each segment. And if I get to a segment like that one right there that's not moving freely...

KIMBERLEY MAH It's tender.

STEPHEN ROWE I then I'm going to ask her if it's tender -- well she just volunteered that -- but that would indicate to me that that's very likely subluxated.

ALAN ALDA (NARRATION) Stephen Rowe now confirms the subluxation with his Nervo-Scope. It compares skin temperatures across the spine, and has a long history in chiropractic.

STEPHEN ROWE I'm looking for subtle differences at specific levels.

ALAN ALDA (NARRATION) Palmer said disturbed nerves can show up as imbalances in heat. It's reminiscent of the Chinese concept of Yin and Yang, and has equally little basis in anatomy. Having located Kimberley's subluxation, Stephen Rowe now uses an X-ray to plan the adjustment procedure.

STEPHEN ROWE I'm looking for factors like whether she has a proper curve, proper neck curve, a proper thoracic curve, and a proper lumbar curve. Then I'm looking intersegmentally, between each segment intersegmentally, as to how they align. She has what's called a base posterior sacrum, where her sacrum is misaligned in relationship to the fifth lumbar. And that's what we'll be adjusting on her.

JOHN BADANES This for a chiropractor would be a curve that needs to be fixed. It needs to be straightened out.

ALAN ALDA Now, is it possible to straighten it out with...

JOHN BADANES With the methods that people do?

ALAN ALDA With adjustments using people's hands?

JOHN BADANES Well, like I say, I don't think that it is. I don't think the major changes in spinal configuration can be made. But that's not the point. The point is that it's never been demonstrated that the shape of the spine has anything to do with disease or health.

STEPHEN ROWE Good, just bring your pelvis a little...

ALAN ALDA (NARRATION) Nevertheless, in a procedure repeated many times over in chiropractors' offices across the country, Kimberley gets her spine adjusted.

STEPHEN ROWE OK Kimberley, just relax, nice and easy. Let that belly go forward. There we go.

KIMBERLEY MAH I feel great.

ALAN ALDA (NARRATION) The popping noise that joints can make is often interpreted by chiropractors and patients to mean the bones have moved. In fact, it's just dissolved gas being released in the joint fluid.

JOHN BADANES These joints are similar to the joints in my finger. My finger is two little bones and there is wrapped, there's a space between it, like this, and that's wrapped in a joint capsule with fluid. And when you pull them apart, as I did there, it makes that popping sound. But, of course, my finger hasn't changed its position at all. Well, the same thing happens when you manipulate the spine. Patients believe that the bone was out of place and that noise signals...

ALAN ALDA ...snapped back into place...

JOHN BADANES ...into alignment.

ALAN ALDA ...into alignment.

JOHN BADANES Exactly, because that's what the chiropractor...

ALAN ALDA But you're saying you really can't change the position of the bone by this procedure that results in a crack.

JOHN BADANES Not by that. Not by that. Otherwise, you know, every time you cracked it you might be in danger of coming apart.

STEPHEN ROWE Lift up your right arm...

ALAN ALDA (NARRATION) Kimberley gets a second adjustment.

STEPHEN ROWE ...attach it right there. OK, just right there, there you go. Drop that shoulder. Excellent. As a result of this, I would expect some of the symptoms that she initially talked about -- her congestive sinuses, the heaviness in her neck and in her head -- to be reduced.

KIMBERLEY MAH Chiropractic is a regular way to stay healthy. I get adjusted on a regular basis. Approximately every two weeks to three weeks, depending on how I feel and on how everything's going, if my adjustments are holding well, then we can make the time between adjustments last a little bit longer.

ALAN ALDA (NARRATION) Robert Baratz is a physician who believes, with Wally Sampson, that patients like Kimberley are confusing cause and effect. The treatment is unconnected to health, he says -- chiropractic bears no relation to reality.

ROBERT BARATZ The chiropractic theory of manipulation as being curative of disease or in terms of diagnosing disease, is based on a false premise. The premise is that there's some kind of vital force flowing around the body, as yet undefined and unquantified and undetectable, that they claim they can manipulate by manipulating the spine.

ALAN ALDA (NARRATION) Here's the leg-measuring procedure again.

DAVID DONALDSON By comparing the like surfaces here, I get a right short leg. That tells me that there's an imbalance in the system, and it's a go-ahead to keep analyzing the patient and I know where to go with that now.

ALAN ALDA (NARRATION) The imbalance needs adjustment.

DAVID DONALDSON This is an Activator 3. It's the third generation of development. And what we've done here is made an instrument that has an ultra-fast thrust. And we know that if we can activate the nervous system faster, then we don't have to push it as hard. We don't have to get the cracking noises that are often associated with the chiropractic adjustment. But we're accomplishing the same thing. And then I go ahead and check the leg length again, and the legs are now even. It tells me that I've made a good correction.

ROBERT BARATZ If someone says they can measure leg lengths as being different, and that's the basis for their diagnosis, what is the diagnosis? First of all, it's normal to have leg lengths that are of different lengths. That's true in almost everyone.

DAVID DONALDSON Lift your head up. Back down.

ROBERT BARATZ The length of the leg is not determined by the spine, it's determined by the bones of the leg. And by manipulating the spine or the back, you're not going to change that, because those bones aren't going to change their length by any form of manipulation, unless you break them.

ALAN ALDA (NARRATION) It's easy not only for the patient to be fooled, but the chiropractor too.

JOHN BADANES Small changes in this position like this can fool the practitioner if their expectation, if...

ALAN ALDA It's longer over here than it is over there.

JOHN BADANES Correct.

ALAN ALDA (NARRATION) It's fair to ask if it really matters if chiropractic makes sense. After all, people do illogical things all the time. But there is one problem - some forms of chiropractic involve violent manipulation. Many techniques concentrate on the nerves of the neck, including this one, called "toggle recoil".

DAVID BROWNING The upper cervical spine specifically, which is what this technique focuses on, is the only area of the body where you can directly access the nervous system. It's got -- and this is just physiology and neurology -- it's got four to five hundred times the amount of mechano-receptors, proprio-receptors, things of that nature that go directly into and effect the way your brain stem function. So if there's a problem in that area, we want to know about it.

ALAN ALDA (NARRATION) The chiropractor believes this patient's neck bones are at the wrong angle. They must be adjusted.

DAVID BROWNING ...you can see some lines drawn in here, and there's a number, it says twenty-six degrees. That's giving me an idea of the Atlas Plane Angle.

ALAN ALDA (NARRATION) Chiropractors have always maintained that neck manipulation is safe, with maybe one in a million procedures causing injury - no worse than many other health treatments.

DAVID BROWNING ...scoot right into my contact. We're gonna set the headpiece...and that's it.

ALAN ALDA (NARRATION) But beginning in the mid-1990s with this book by an injured patient, the safety of neck manipulation has been increasingly questioned.

ROBERT BARATZ Going to a chiropractor and having your neck manipulated is extremely dangerous. Now, can many people have it done and not have a bad



outcome? Sure they can. Do you want to take that risk?, is the question. Do you want to be the one who gets the paralysis? Because every year there are hundreds of people who get their necks manipulated, have their vertebral arteries torn by chiropractors and end up paralyzed.

JOHN BADANES Many chiropractic adjustments are made by first laterally flexing the head and turning it like this.

ALAN ALDA (NARRATION) This manipulation puts a severe strain on one of the two vertebral arteries leading to the brain.

JOHN BADANES When you move the neck suddenly, when you take it to tension and then move it suddenly, you're giving that little extra tension pull on the vertebral artery and you can create a little tear which repairs itself with a blood clot. And that blood clot can then dislodge and go up to the brain and deprive the brain of oxygen and that's called a stroke.

ALAN ALDA (NARRATION) It's very hard to know how often this type of stroke is caused by chiropractors -- good statistics don't exist. But a recent Canadian study estimated that 20% of all strokes caused by artery damage could be a result of neck manipulation. That translates into more than 1300 strokes a year in the US. There are many types of chiropractors, with many different techniques, but they are all based on one idea.

ALAN ALDA It's your position that it doesn't matter what kind of chiropractor you get, what special way he or she might have of dealing with your problem -- none of them is gonna work.

JOHN BADANES It's my position that they're all self-referential. In other words, they define a particular problem that incidentally has never been verified to be a problem, and then they have their methods of locating that problem, and then they have their specific methods of fixing it. So it's like a closed loop, and so it always works because you're just talking to yourself.

ROBERT BARATZ There is no scientific basis for what chiropractors allege they are doing. It is totally based on a religious belief system. And as long as you call it that, fine, but don't call it health care, and don't call it a form of science because it is not.

## NEEDLES AND NERVES

ALAN ALDA (NARRATION) China International Medical University is a small company that offers an increasingly popular service - acupuncture. Dr. Jiang, who trained in China, will treat the young man for insomnia.

DR. JIANG The patient is suffering from insomnia. Maybe due to stress, maybe due to heart Qi deficiency. Because he is a student he has a lot of stress.

ALAN ALDA (NARRATION) She measures down to the two Hsinshu, or heart back points. She inserts fine needles, no thicker than a human hair, and then uses an up and down movement to "tonify the heart Qi." Qi, in Chinese medicine, is the body's basic life energy. Now she moves down to the Kanshu, or liver back points, where she will relieve "stagnation of the liver Qi." The patient later reported his insomnia cleared up. Of all the alternative medical practices, acupuncture is probably the most widely accepted. It's often covered by insurers. In America, interest in acupuncture really took off after Nixon went to China in 1971. A New York Times reporter, James Reston, had been in Beijing during Henry Kissinger's preparatory visit. Reston had to have his appendix out, and after conventional surgery at the Anti-Imperialist Hospital, he was given acupuncture for post-surgical pain. He ended his glowing account of the experience by writing that the hospital,

JAMES RESTON VOICE ... like everything else in China these days...is on its way toward some different combination of the very old and the very new.

ALAN ALDA (NARRATION) Acupuncture is very old - the first descriptions date back 4000 years. These illustrations are about fifteen hundred years old, but the dense maps of meridian lines and acupuncture points that you see nowadays are from the nineteenth century. Depending on who you ask, there are up to a thousand usable points on the body. Bill Stroud gets acupuncture from Dr. Jiang every two weeks. Bill's got heart problems and diabetes, and he says these visits help. What science says, right now, is maybe -- there could be something happening, but it's not clear what.

BILL STROUD When they hit the mark, I get a tingle.

ALAN ALDA What do you mean, hitting the mark?

BILL STROUD When she hits the nerve.

ALAN ALDA After it reaches a certain depth and it gets to the nerve, that's when you feel it tingle?

BILL STROUD That's it.

ALAN ALDA I see.

BILL STROUD Then it goes down to my fingertips.

ALAN ALDA Yeah.

BILL STROUD And my toes.

ALAN ALDA Is it similar to the pins and needles you feel when your foot goes to sleep?

BILL STROUD No.

ALAN ALDA What about...is it like...I'm trying to try out some feelings that I'm aware of...is it like a little electric shock?

BILL STROUD Yeah, that's more like it.

ALAN ALDA Yeah?

BILL STROUD Yeah, it's a little shock.

ALAN ALDA (NARRATION) We're observing Bill's treatment with a cardiologist who's a leading acupuncture researcher.

JOHN LONGHURST ...so the Neikuan is right here. This is along the so-called pericardial meridian.

ALAN ALDA This is what Bill is getting now?

JOHN LONGHURST Yes. They're stimulating here, Neikuan, and then up here, at the Hsimen.

ALAN ALDA This corresponds to a nerve identified by western medicine...

JOHN LONGHURST Yes.

ALAN ALDA ...that's actually in everybody's arm.

JOHN LONGHURST What we've found is this, is that most meridians overlie major neural pathways. Most of them do -- not 100%, but most of them do. And then the acupuncture points would be sticking the median nerve at various different levels.

ALAN ALDA (NARRATION) The central belief in acupuncture is that stimulating specific points can affect particular body functions. One of the few scientific demonstrations of this came when colleagues of John Longhurst used a

brain scan to detect activity while stimulating a traditional, vision-related point on the toe.

JOHN LONGHURST They showed that the visual cortex up in the brain lit up. So, that's kind of provocative.

ALAN ALDA And that has been considered for centuries by the Chinese as a way to affect vision.

JOHN LONGHURST Exactly.

ALAN ALDA (NARRATION) Bill's Hsimen point is stimulated in order to help his heart Qi. It's not language scientists understand, but that doesn't mean nothing's happening. DR. JIANG Heavy thrusting -- light lifting, heavy thrusting -- light lifting. This is to build up the heart Qi.

ALAN ALDA How do you know you've got the heart Qi? How do you know you've got the right spot for that?

DR. JIANG I feel some heaviness under my fingers. I feel the Qi. I feel I've captured...

ALAN ALDA You feel some resistance?

DR. JIANG Yeah, I captured the Qi.

ALAN ALDA I see, so you're responding to the Qi in his body, and that's how you know you've got it.

ALAN ALDA (NARRATION) Twenty minutes later and Bill's happy.

ALAN ALDA How you doing Bill?

BILL STROUD Fine.

ALAN ALDA Yeah?

BILL STROUD Yeah. Real good.

ALAN ALDA Do you feel relaxed? You said you often feel relaxed.

BILL STROUD Real relaxed, yeah.

ALAN ALDA Why don't you...

BILL STROUD I think I almost dropped off to sleep while you fellows were talking.

ALAN ALDA (NARRATION) We're going to look at one of John Longhurst's experiments involving blood pressure.

ALAN ALDA Does the act of measuring somebody's blood pressure alone have an effect on the blood pressure?

JOHN LONGHURST Uhuh. And if you wear a white coat, it increases it even more.

ALAN ALDA (NARRATION) The background to this experiment is some key results John Longhurst has found in animals. Stimulating the Hsimen and Neikuan heart points released natural opiates in the brain. These opiates were able to reduce the animal's response to stress, suppressing blood pressure. He's sure this is real. He could stop the effect when he blocked the opiates, and animals, of course, don't have any ideas or beliefs about acupuncture.

ALAN ALDA Were you surprised when you came across this confirmation that it stimulates the body's opiates?

JOHN LONGHURST Let me just say that I, like most western scientists and western physicians, had absolutely no belief that acupuncture had any validity to it. I didn't believe it worked. It was only after I read the literature and started to do my own studies that I started to believe in it. But I did not come at this from the viewpoint that, a priori, that it worked.

ALAN ALDA (NARRATION) Eric, our experimental subject, is having his Hsimen and Neikuan points located by Peng Li, Longhurst's Chinese collaborator.

PENG LI Any feeling now?

ERIC A little. Yeah.

ALAN ALDA When you leave here after one of these trials, do you feel any different from the way you did when you came in? ERIC I don't feel much different. And that's not normal after a workout like what I'm going to be doing.

ALAN ALDA (NARRATION) They're going to use electric acupuncture to stimulate the nerves, because it's more controllable than the manual method.

PENG LI Switch on.

ALAN ALDA (NARRATION) The twitching shows Eric's median nerve, which runs from neck to fingertips, is being stimulated.

TECHNICIAN Eric we just shut the light, OK?

ERIC OK.

ALAN ALDA (NARRATION) Eric gets 30 minutes of acupuncture in a low stress setting, which won't elevate his blood pressure. For comparison, other subjects get the same thing, but without the acupuncture. Now the test. Eric has to peddle until he can peddle no more. At that point, his blood pressure will be at its peak.

JOHN LONGHURST 105 over 70.

ALAN ALDA (NARRATION) It's the first number that matters.

JOHN LONGHURST 120 over 65. 128 over 68. 140 over 60. 148 over 60. 150 over 58.

ERIC Uncle.

JOHN LONGHURST OK. Let me get a last blood pressure.

ALAN ALDA You do want to get his blood pressure before he's lying on the floor, right?

JOHN LONGHURST Yes, I do.

ALAN ALDA You can do it, Eric.

TECHNICIAN Come on.

JOHN LONGHURST 158 over 55.

TECHNICIAN Thank you.

ALAN ALDA (NARRATION) The results of the study were a surprise. Subjects who got acupuncture at the Hsimean and Neikuan heart points, as expected showed significantly lower peak blood pressure, compared to the no acupuncture group. But as an additional control, another group received acupuncture at the

Hoku point, which is supposed to affect the intestines, not the heart. And that point turned out to be just as good at lowering blood pressure.

JOHN LONGHURST We found that that was as potent as our cardiovascular active one.

ALAN ALDA For a cardiovascular response?

JOHN LONGHURST For the cardiovascular response to exercise, exactly.

ALAN ALDA So now what will you do? You'll have to pick another spot.

JOHN LONGHURST Exactly. We do have another comparison and that is no acupuncture whatsoever.

ALAN ALDA Yeah.

JOHN LONGHURST And there, both of them seem to be better than no acupuncture whatsoever.

ALAN ALDA But at the moment, that seems to indicate that if you stick a pin in a person anyplace, you're liable to get this cardiovascular response.

JOHN LONGHURST At least in two places.

ALAN ALDA At least in two places.

ALAN ALDA (NARRATION) So acupuncture has effects, but not in the way Chinese theory describes. That's where John Longhurst's research stands right now, but his conclusion that acupuncture stimulates the body's own opiate system opens up some intriguing ideas. Scientists are now coming to believe that most alternative therapies, where they have any effect, operate through that same opiate system. There's another name for this. It's the placebo effect, and it can be triggered by many things - belief, expectation, habit, discussion, touch. Acupuncture is a kind of double dose of placebo.

JOHN LONGHURST Some of my colleagues in alternative medicine would not like me saying this, but almost any sort of alternative medicine that is being used today, a significant portion of its effect is through a placebo. Whether you're talking about healing touch or aromatherapy or herbal medications or acupuncture. Just any of these things, transcendental meditation, any of them, there is a potential for a placebo effect. But I will go one further step and say that I think despite this, I think that some of these alternative therapies, including

acupuncture, there is a real effect over and above placebo. It's just the window between what is placebo and what is real is somewhat narrow.

ALAN ALDA What do you look forward to finding out as time goes on? What are you really trying to...what do you want just to narrow down to?

JOHN LONGHURST OK. I would like to see it -- acupuncture and complimentary therapies that have proven to be beneficial -- to be taught in medical schools today. Because certainly, when I went to medical school, we didn't even talk about this form of therapy. Yet we know that as many people see an acupuncturist or a physician who is going to give some form of complimentary therapy, as see primary care physicians today. And most people don't realize that so many patients are accessing this other form of therapy. So don't we need to know something about it? Don't our physicians need to be able to ask questions?

## HEALING TOUCH

ALAN ALDA (NARRATION) This is Columbia-Presbyterian Hospital in New York City. It's one of the country's leading medical institutions. Here patients with serious heart problems are receiving some surprising treatment. It's called therapeutic touch, although there's no actual touching involved. Ellen McMahon, a nurse, is following procedures based on traditional Chinese medicine.

ELLEN McMAHON It's our belief that your body goes beyond your skin.

ALAN ALDA (NARRATION) Ellen is manipulating what the Chinese call Qi.

ELLEN McMAHON Using your hands, you might want to call them kind of like geiger counters, you just keep going over it, working with the areas where you feel need, and then smoothing it. It's our belief that underneath, if we can make you balanced, that it can help the whole of your body. And if you're in a state of restfulness, healing will proceed.

ALAN ALDA (NARRATION) A few years ago, they set out to study whether therapeutic touch can help heart bypass patients. For comparison some patients received a sham treatment. The placebo effect, that John Longhurst believes is at work in alternative therapies, was obviously a possibility.

LORISSA KLAUS The sham therapeutic touch practitioners don't have the training for one, in therapeutic touch, and they also don't have, hopefully, the knowledge of what therapeutic touch is.

ALAN ALDA (NARRATION) Some patients get trained practitioners, some get the sham version, some get nothing. How the three groups do after surgery will



be compared. All three groups get the same surgical treatment. While the operating room staff goes about their normal duties, they're regularly joined by a new team member at the head of the table, working on the patient's energy balance. That's how the study was supposed to work. But they ran into problems.

LORISSA KLAUS The sham practitioners have come and done their treatment and then they come back and report to me and they say, well, I think I felt something. How do you account for that?

ALAN ALDA (NARRATION) A key component of therapeutic touch is a conscious intention to heal. If the sham practitioners are feeling something, maybe they're healing, too. You'll never know if the trained practitioners are doing any better, or if it's all just placebo effect. So then they tried another approach. This is a lab culture of live cancer cells. Eric Liu is preparing them for treatment. Frank Huo is an expert in Yuan Qi, one of the Chinese energy therapies that therapeutic touch is based on. In his own practice, Frank treats cancer patients. By having him fight cancer cells they can directly measure any effect he has, and there shouldn't be any placebo effect to confuse the results.

ERIC LIU Left hand up on the belly button, right hand over the plate.

ALAN ALDA (NARRATION) The cell study still requires sham practitioners for comparison. That part's played by medical students.

ERIC LIU While you're holding the poses, I want you to count back in your mind from 100, down to zero by sevens, and the reason I'm doing that is because I want to eliminate any intention. Because with your mind occupied, doing subtraction, you won't be thinking about the cells, you'll just be thinking about the math.

ALAN ALDA (NARRATION) Assuming the sham practitioners don't spontaneously acquire any healing intentions with cells, as they did with heart patients, then this study stands a better chance of obtaining scientifically valid results. But the results showed no identifiable effects - by therapeutic touch practitioners, shams, or Frank Huo, the Yuan Qi expert. There are no further therapeutic touch trials planned at Columbia-Presbyterian. The foundation of therapeutic touch is the practitioner's ability to sense a patient's supposed energy. This is how practitioners describe the experience.

PRACTITIONER There's like a pulsing, or sometimes there's a temperature change, or sometimes it literally feels like energy, like if you've ever kind of zapped your hand when you've turned on a light or something.

PRACTITIONER There's just a thickness as I move past an area...

PRACTITIONER A warmth emanating from the person's body in that particular area, an area of imbalance in the total body.

ALAN ALDA (NARRATION) In 1996 Linda Rosa, a nurse, and her husband, Larry, worked on a terrific science project with their daughter, Emily -- to see if therapeutic touch practitioners could detect her energy field.

EMILY ROSA The only way that I could really find out if they really could feel my energy field is if they couldn't see.

ALAN ALDA (NARRATION) The hands belong to a trained therapeutic touch practitioner. A coin toss determines where Emily will position her hand. Then the practitioners have to say where the hand is.

EMILY ROSA OK.

PRACTITIONER Left.

PRACTITIONER Right.

ALAN ALDA (NARRATION) To generate reliable statistics, 14 practitioners each get 10 trials.

EMILY ROSA OK.

PRACTITIONER Left.

EMILY ROSA I got 4.1 for an average of correct guesses. Five is chance and they got below chance.

ALAN ALDA (NARRATION) The practitioners failed to detect Emily's supposed energy, so it's hard to see how therapeutic touch can work - except, that is, through the placebo effect. Emily's study caused quite a stir when it was judged rigorous enough to be published in the Journal of the American Medical Association. At 11, she was the youngest author ever to appear in those august pages. That's it for our program on alternative medicine.

KIMBERLEY MAH I feel great.

[return to show page](#)

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