



Dawson Church, PhD, founded Soul Medicine Institute to research and teach emerging psychological and medical techniques that can yield fast and radical cures. His book *The Genie in Your Genes* pioneers the field of epigenetics, explaining the remarkable self-healing mechanisms emerging from this science. Through EFT Power Training, he teaches groups how to apply these breakthroughs to health and athletic performance. Publisher of Elite Books and Energy Psychology Press, he has worked with many leading authors during a long career in health publishing. He was born on November 15, 1956, in Cape Town, South Africa.



Your DNA Is Not Your Destiny

“Josephine Tesauro never thought she would live so long. At ninety-two, she is straight backed, firm jawed, and vibrantly healthy, living alone in an immaculate brick ranch house high on a hill near McKeesport, a Pittsburgh suburb. She works part time in a hospital gift shop and drives her 1995 white Oldsmobile Cutlass Ciera to meetings of her four bridge groups, to church and to the grocery store. She has outlived her husband, who died nine years ago, when he was eighty-four. She has outlived her friends, and she has outlived three of her six brothers.

“Mrs. Tesauro does, however, have a living sister, an identical twin. But she and her twin are not so identical anymore. Her sister is incontinent, she has had a hip replacement, and she has a degenerative disorder that destroyed most of her vision. She also has dementia. ‘She just does not comprehend,’ Mrs. Tesauro says.

“Even researchers who study aging are fascinated by such stories. How could it be that two people with the same genes, growing up in the same family, living all their lives in the same place, could age so differently?”

Josephine Tesauro and her sister have identical genes. Not similar genes or closely matched genes, but an absolutely identical set of genes. Yet with exactly the same genetic information to work with since birth, they have had radically different health paths. One is healthy and active, living large in her nineties. The other sister is constrained by her many physical ailments, and the loss of her mental faculties, according to the *New York Times*, which published their story recently.



Josephine Tesauro and Her Sister

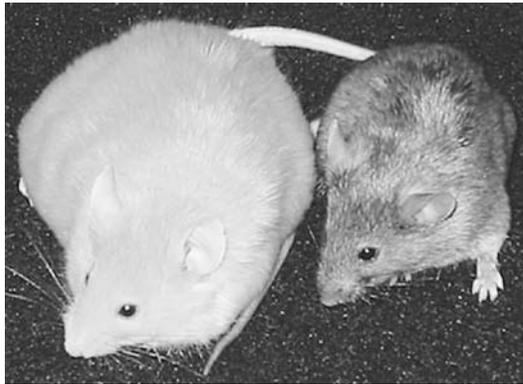
What creates such different health outcomes as we age? The media is full of stories of the power of genes, identifying a gene for this or that characteristic. Yet examples like those of the Tesauro sisters contradict the popular notion that your genes determine your destiny. People with the same genes can diverge in appearance, life span, and health. James Vaupel, director of the Laboratory of Survival and Longevity at Germany's prestigious Max Planck Institute, says that, on average, identical twins die more than ten years apart. Same genome, divergent life spans. So if your genes don't determine that much about your health or life span, what does?

The new science of epigenetics shows that many factors from the environment outside the cell, even from outside the body, can trigger changes in genes. Genes need to be "turned on" by a stimulus in order for the body to act on the information contained in the genetic code. For instance, when you are healthy and at rest, your body keeps your immune system at a low "standby" level, like a computer in sleep mode. But if you get a cut or a cold, it puts the immune system into high gear, and shunts enormous resources into repelling invading bacteria and viruses. The hard disk is spinning and the processor is churning in high gear. Infection is the epigenetic trigger that signals the body to turn on the genes necessary for a strong immune response. We have a huge and complex set of switches in our bodies. Genes are being switched on or off all the time, based on the signals our bodies are receiving. The body activates the genes it needs to face its current challenges, and turns off the genes it doesn't need at the moment. Just because you have a particular gene (for example, a gene associated with obesity, dyslexia, or cancer), that does not mean it's turned on.

Some epigenetic triggers are beyond our control. But some are completely within our control. What we eat and drink and whether

we choose to smoke or take drugs are simple examples. One of the first scientific experiments to demonstrate the epigenetic effects of food intake was done with mice, which are often used in experiments since they are genetically quite similar to human beings.

The researcher, Randy Jirtle, PhD, a professor at Duke University, fed pregnant mice a diet rich in a substance called methyls. These methyl groups eventually made their way from the digestive tract to the brains of the mice, where they attached to a gene called the agouti gene. When a methyl group attaches to a gene, it inhibits the ability of that gene to turn on. By feeding the expectant mice a diet rich in methyls, Dr. Jirtle suppressed the activity of the agouti gene. The result was astounding. The agouti gene is associated with a yellow coat rather than brown fur. Agouti mice have yellow coats and are also much more prone to cancer, diabetes, and obesity than those in whom the gene has been suppressed. They die at about half the life span of agouti-suppressed mice. So two mice with identical genes can have completely different disease profiles and life spans when just a single gene is epigenetically modified.



Genetically Identical Mice (Suppressed Agouti Gene on Right)

A study published by Dean Ornish, MD, in 2008 showed the epigenetic effects of lifestyle change in human beings. His subjects were thirty men with low-risk prostate cancer, and he did “gene scans,” using advanced DNA microarray technology, of all 23,888 of their genes. This allowed the researchers to see which genes were switched off and which were switched on. Rather than submitting to medical treatment with drugs or surgery, the experimental subjects agreed to change their lifestyle. They ate a healthy diet rich in whole grains, fruits, legumes, soy, and vegetables, exercised moderately (such as walking) for half an hour a day, and spent an hour a day in a stress reduction activity such as meditation.

After three months, they again had all their genes scanned to determine what changes had occurred. The researchers found that 48 genes had been turned on, and 453 had been turned off—an epigenetic effect on 501 genes triggered solely by the positive lifestyle changes the men had made.

Norman Shealy, MD, PhD (see his chapter in this book), coauthored, with me, the book *Soul Medicine*, which explains the world of energy medicine and how to find and work with your ideal practitioner. Norm recently broke new ground in studying the epigenetics of aging. He examined a genetic marker called a telomere. These are the “tails” of genes, and they get about 1 percent shorter each year. Experts can tell how old a cell is by the length of the telomeres, though if you have unhealthy habits, your telomeres shrink faster. After measuring the telomere length of his six subjects, he put them on a healthy diet and exercise routine, and had them use his patented RejuvaMatrix, which bathes the body in an electromagnetic field with the same frequencies as human DNA. After three months on Norm’s program, the telomeres of his subjects stopped getting shorter, and actually began to lengthen! After ten months, they were almost 3 percent longer, suggesting that we can reverse many of the signs of cellular aging by a healthy electromagnetic environment and a supportive lifestyle.

Nurture Changes Nature

It’s not just what we eat and drink that gives epigenetic signals to our bodies. Our emotional experiences also change the functioning of genes in our brains. Another famous researcher, Moshe Szyf, PhD, of McGill University, found that nurturing is epigenetic. Nurturing creates changes to the genes in our brains that help us deal with stress. Dr. Szyf’s experiments used genetically identical rats. Some rat mothers nurtured their offspring, licking and grooming them constantly. Other rat mothers were neglectful. He found that the baby rats who were nurtured showed epigenetic changes in parts of the brain that handle stress. Molecules called acetyls, which help DNA turn on, had attached to the genes that mediate the stress response. When baby rats who had been nurtured by their mothers grew up, they had a much better ability to handle stress.

Dr. Szyf then wondered what would happen if he chemically stripped the acetyl groups out of the brains of the nurtured rats. He tried this and found, sure enough, that these rats then became fearful and easily stressed. He then injected acetyls into the brains of rats that had not been nurtured, and they suddenly showed the ability

to handle stress. This was a convincing demonstration that it's not just physical factors such as diet that result in molecular epigenetic changes to the brain, but that emotional factors such as nurturing produce molecular alterations too. I emphasize again that there is no change to the DNA itself; with identical genes, we can see very different results in well-being and other life factors.

The brains of human beings with disorders such as schizophrenia show similar changes in the acetylation of the parts of the brain that mediate the stress response. And, as with the rats, children who are not nurtured lose their ability to handle stress. Love produces the same results in human beings as it does in other animals. Love and nurturing are epigenetic interventions that can make a huge difference in the quality of our lives.

In a large-scale study of 17,400 adults done by the U.S. Centers for Disease Control and Prevention with Kaiser Permanente, a group of researchers looked at the link between emotional trauma and health. They found that children who had experienced traumatic emotional events were more likely to have serious diseases as adults. The more traumatic the childhood, the higher the disease risk. Traumatized children had higher rates of heart disease, cancer, diabetes, hepatitis, obesity, bone fractures, and other conditions. They were three times as likely to smoke, and thirty times as likely to attempt suicide. Badly nurtured children not only have the same inability to handle stress as badly nurtured rats, they also have a higher likelihood of disease than their well-nurtured counterparts.

A 2007 study published in the journal *Biological Psychiatry* looked at the genetic profiles of eighteen medical students. Nine months later, just before their licensing examinations, the researchers did a second gene scan. They found that many genetic switches had been tripped by the stress under which the students were laboring just before the exam. Other studies, looking at people who are lonely and depressed, find more than two hundred gene switches that are tripped in such emotionally traumatized people. Many of these genes regulate the immune system and our response to inflammation, showing another compelling link between our emotional states and our physical health.

By way of contrast, a group of nineteen subjects was taught to de-stress themselves using the relaxation response. Developed by Harvard psychologist Herbert Benson, the relaxation response has people tense and release their muscles sequentially in order to induce a sense of well-being and release tension. Dr. Benson examined the genetic baseline of his subjects before and after they began practicing the relaxation response. He also compared them to another

nineteen subjects who were long-term practitioners of relaxation response techniques. He found that many genes were turned on or off after relaxation, especially those relating to cell health, inflammation, and how the body handles free radicals, which unless neutralized can damage tissues.

Love is good for your health, and the ability to nurture yourself and release your emotional upsets is an epigenetic gift, if you are able to accomplish it. And as the Benson experiment demonstrates, even if you did not have a nurturing childhood, you can learn new skills as an adult to help you reverse the epigenetic signals that you were sent early in life.

It Is Never Too Late

So how can we nurture ourselves, and nudge the complex of epigenetic switches in our bodies to make us as healthy and happy as possible? If you are like me, you did not learn much about self-nurturing when you were growing up. By the time I reached thirty-eight years of age, I was running a big publishing company and taking good care of my employees and clients, as well as my wife and children.

There was only one person I was not taking good care of, and that was me. I had frequent respiratory ailments, and my back ached every day. My joints went out of alignment easily, and I suffered from gout. Some days I was in agony, and I could not move in any direction without screaming involuntarily from the severe pain. I battled depression, addiction, and insomnia. I had time for everyone else, but no time for me. When I tried to take some time for myself, there was always someone else's need to attend to.

Now, in my fifties, I take much better care of myself, and I feel vibrantly healthy. As well as diet and exercise, I pay great attention to emotional health. When I have an upset, I resolve it as fast as possible. And I have a daily routine that supports a peaceful and serene state, despite a busy schedule of lectures and consulting. It took a lot of effort to retrain myself in the art of self-nurture.

Here are the concrete steps you can take to create an emotional "love nest" for yourself. These are all practical methods to help you handle stress, create inner peace, and release the emotional charge of traumatic events. Best of all, most of them are free, and easy to learn:

- Meditation
- Prayer

- Optimism
- A positive attitude
- Energy medicine
- Energy psychology
- Positive beliefs
- Positive visualizations
- Acts of kindness
- Love
- Nurturing
- Spirituality

By “energy medicine,” I mean methods such as Reiki, Donna Eden’s energy medicine, Quantum Touch, Therapeutic Touch, and other methods that alter the body’s electromagnetic state. A full list appears in the book *Soul Medicine*.

By “energy psychology,” I mean methods such as Emotional Freedom Techniques (EFT), Thought Field Therapy (TFT), Tapas Acupressure Technique (TAT), and other similar therapies that release the emotional charge of traumatic events. In my book *The Genie in Your Genes*, I provide a full explanation of how energy psychology works, and how to use some of the most popular methods.

The key to epigenetic health is releasing as much as possible of the unhealthy programming we received as children, and then releasing stresses that occur in present time right after they occur.

Try this simple experiment from energy psychology to see how easy it is. Think of a recent incident that deeply upset you. Give it a number from 0 to 10, with 0 being complete peace, and 10 being the most extreme upset possible. Write down your number. Now cross your hands over your heart, and take three deep breaths. Tap on the center of your chest with one hand ten to fifteen times. Take another breath. Now think about the incident again, and write down your number. Most people report a big drop in the intensity of their feelings after doing this fast and simple exercise to release emotional charge. Rather than storing all that emotion in your body, you’re letting it go. Do this whenever you have a big emotional reaction and you start to create a life in which you aren’t being the neglectful rat mother to yourself! Clean up enough of your real-time emotional reactivity and you can then work on your childhood deficits with the aid of a good coach or psychotherapist.

That’s the kind of work I do now, much of it with veterans of the wars in Vietnam, Iraq, and Afghanistan. We teach EFT to soldiers

suffering from posttraumatic stress disorder (PTSD). After they learn to release the intense emotional energy of their combat experiences, many of them apply these methods to their personal lives. This is part of the Iraq Vets Stress Project (www.StressProject.org), which connects coaches who are teaching EFT with veterans suffering from PTSD. In witnessing the powerful positive changes in the veterans' lives after EFT, I am awed and humbled to see the difference that self-nurturing makes.

I've also tried this with elite athletes. Helping healthy people release emotional memories enhances their performance. I performed a rigorous type of scientific experiment called a randomized controlled trial (RCT) with the men's and women's basketball teams at Oregon State University. We split them into two groups. One received EFT and the other received a placebo treatment, a fake intervention. Before and after treatment, we tested how high they could jump, and how many free throws they could accurately deliver into the basket. Although both groups performed about the same beforehand, their performances afterward were very different. The group that received EFT scored an astonishing 38 percent better at free throws than the group that got the fake intervention!

I teach EFT to groups through an organization called EFT Power Training and we're seeing major changes in the stress levels of executive groups, sports teams, professional organizations, and other collections of people who learn EFT. When you release your stress, you perform better at any task, no matter whether you're hitting a business sales target, putting a golf ball on the green, doing surgery, or coaching a client. As your stress level goes down, all your body's biological resources become available for cell repair, combating the effects of aging, and filling you with lightness and energy.

The bottom line is that you are not living a life script programmed into your DNA at conception and out of your control ever since. You have it in your power to change the on-off switches on many of your genes. In fact, you're doing this every day already, through your emotions and your lifestyle. As you learn the skills of self-nurturing, you consciously select responses that support a long and healthy life. You can increase your physical energy, sharpen your intellectual powers, boost your spiritual practice, and live a life brimming with optimistic promise at any age. So love yourself, and choose the best life possible!

