


Becoming Your Own Genetic Engineer with EFT

EFT Masterclass 2010
Dawson Church, PhD
www.EFTUniverse.com

How We'll Have Fun Together Today


- Today we'll look at:
- Stories and studies showing the rapid alleviation of psychological and physical symptoms with EFT
- The old explanations from the 1970s for these "miraculous" results
- The scientific explanations that emerged later.



2

The 7 New Scientific Explanations


- Most of these fields of science are so new that they had not even been named when TFT, on which EFT is based, was developed! The others were in their infancy.
- They are:
 - 1. Epigenetics
 - 2. Evolutionary Biology (EvoDevo)
 - 3. Heart Coherence (ANS Balance)
 - 4. Brain Waves & States (EEG, MRI)
 - 5. Psychoneuroimmunology (PNI)
 - 6. Endocrinology
 - 7. Neural Plasticity & Counterconditioning



3

We Need These Explanations


- If you're talking about EFT to a doctor, nurse, psychotherapist, or even an average educated lay person, they will be familiar with the basics of the new science.
- They will not be familiar with the old "magical" energy explanations.
- To connect with modern professionals, and to make it clear that EFT is completely consistent with mainstream science, it's essential to be familiar with the basics.
- They are part of the new EFT training curriculum and certification on the EFT community web site, www.EFTUniverse.com.
- EFT research pages, and *Energy Psychology* journal, use the standards for "Empirically Validated Therapies" developed by the American Psychological Association (APA) Clinical Psychology Division.



4

The Miracles


- "Dave's Fear of Water" on Gary Craig's first DVD set
- Roger Callahan treats "Mary" for her fear of water
- "Rosie" and her arthritis
- Thousands of case histories on the EFT web site
- What's happening in the body to explain these miracles?



5

The Level of Molecular Biology

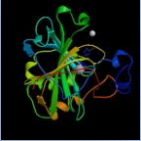

- Let's get down to the level of the very small, the molecules of which the cells of our bodies are formed



6

Protein Molecules

- Proteins are incredibly complex molecules, with differing electromagnetic charges at different points in their structure. This results in folding, which is crucial to shaping proteins correctly.

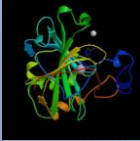



7

Each Protein has a Unique Structure



Protein Molecule 1:

- Histamine
- Heart Rate Increase



Protein Molecule 2:

- Growth Hormone
- Cell Repair

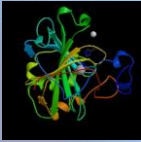

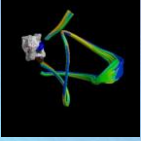
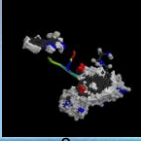




8

Different Structure, Different Function

Protein Molecules:

- Histamine (Top)
- Growth Hormone (Below)
- Beta Blocker (Left)
- Neuropeptide (Right)


9

Protein Formation

About 100,000 proteins
Regulate virtually all the processes of life

- Information transfer between cells
- Structure of cells
- Metabolism
- Energy production

Greek "protas" — of primary importance
So how does our body get the instructions to build these complex structures?
The blueprints are in our genes



10

Central Dogma of Molecular Biology


NATURE VOL. 227 AUGUST 8 1970 561

Central Dogma of Molecular Biology

by FRANCIS CRICK
MRC Laboratory of Molecular Biology,
Hills Road,
Cambridge CB2 3QH

The central dogma of molecular biology deals with the detailed residue-by-residue transfer of sequential information. It states that such information cannot be transferred from protein to either protein or nucleic acid.

Crick & Watson, co-discoverers of double helix structure of DNA.
Coined "Central Dogma" in 1952





11

DNA > RNA > Protein

DNA = blueprint for building protein
– Information required to construct protein

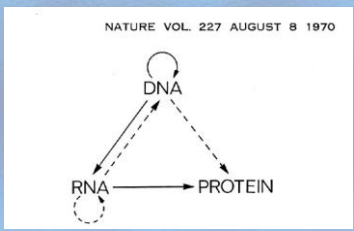
RNA = working drawings at site
– Temporary working copy

Protein = both structure and function
– The building's structure (beams and walls) plus function (repair, temperature regulation, energy generation)

12

All Life's Info Flows From DNA



13

Genetic Determinism

Genetic Determinism held that not proteins but personality and even consciousness was merely an epiphenomenon of the biological properties encoded in genes.

Sir Frances Crick, *The Astonishing Hypothesis* (1994): "You, your joys and your sorrows, your memories and ambitions, your sense of personal identity and free will, are in fact nothing more than the behavior of a vast assembly of nerve cells and their associated molecules."

14

Identical Genes. Identical Lives?

- If Central Dogma were correct, and all info resides in the DNA, then identical twins, who share the same DNA at birth, would have identical health outcomes and life spans.



www.SoulMedicineInstitute.org

15



"Ordinarily no two legal problems are alike, however, in your case..."

16



www.SoulMedicineInstitute.org

17

It Ain't Necessarily So



www.SoulMedicineInstitute.org

18

Identical Twins are Often Different

www.SoulMedicineInstitute.org 19

Epigenetic Influences

- Identical twins die, on average, more than ten years apart. They often suffer from different diseases and may have very different health outcomes. This conflicts with the Central Dogma of Molecular Biology. It demonstrates the falsity of the theory of genetic determinism.
- While their genes are identical, epigenetic influences drive the genome of identical twins apart.

www.SoulMedicineInstitute.org 20

www.SoulMedicineInstitute.org 21

The Genie in Your Genes

- Epigenetic Medicine
 - How Genes Express
 - Epigenetic Mechanisms
 - Energy Signaling Mechanisms
 - Principles for Epigenetic Medicine
- Over 400 studies reviewed
- "Best Health Book" Award Winner, USA Booknews
- "Best Psychology Book" Finalist, Foreword Book Awards
- "Best Self-Help Book" Winner, Written Art Awards

www.SoulMedicineInstitute.org 22

Olivia & Isabelle

- Olivia Murphy, 2 years old, leukemia. Identical twin Isabella does not have the disease. Traced to the stress of a tonsillectomy while a toddler.

www.SoulMedicineInstitute.org 23

Telomeres

- If Genetic Determinism were true, the telomeres of identical twins should be the same length.
- Telomeres, the "tails" of DNA strands, are regarded as the most reliable method of determining aging.
- A pair of telomerase molecules drops off every time a cell divides.
- We have about 15,000 pairs/cell at conception, 10K at birth, 5K (Hayfleck limit) at death. They decline on average 1% a year.
- Telomere assays of peripheral blood lymphocytes & granulocytes allow labs to determine the biological age of an individual.

www.SoulMedicineInstitute.org 24

Epigenetic Influences

- Sue & Sheila Wright, Kent, UK. Identical twins, but telomeres show that biologically, Sue is ten years older. Stress of caring for disabled husband.

www.SoulMedicineInstitute.org 25

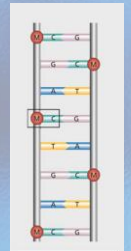
By 30, Epigenetics Changes Genes



www.SoulMedicineInstitute.org 26

Methylation, Acetylation & Other Mechanisms

Expression of genes can be inhibited by the adhesion of methyl groups to the cytosine molecule on a DNA strand, or the adhesion of acetyl groups to the protein sheath.



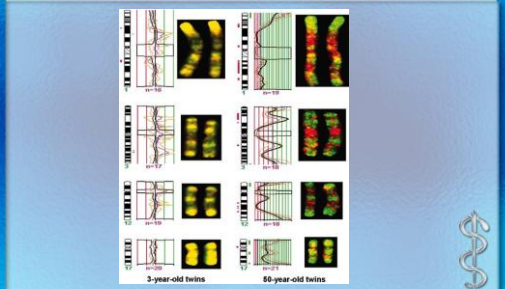
www.SoulMedicineInstitute.org 27

Gene Silencing

- Methyls sticking to cytosine are like gum on a zipper, can't unzip properly. So the gene for that characteristic is present, but not expressed ("gene silencing").
- Signal can be amplified by acetylation, like oiling a zipper so it works more efficiently.
- Let's look at the effects of methylation and acetylation on the genome over 50 years


www.SoulMedicineInstitute.org 28

Yellow is Common @ 3 & 50 YO



www.SoulMedicineInstitute.org 29

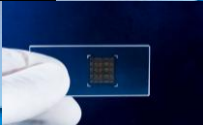
By 50 Stress Dramatically Affects Biological Markers of Cell Aging



www.SoulMedicineInstitute.org 30

Relaxation Response Study


- Benson (Plos One, 2008) showed that the Relaxation Response alters the expression of stress genes.
- Healthy individuals. Compared gene expression between long term RR practitioners with non-practitioners.
- Phase 2: non-practitioners went through 8 week training to see if gene expression changed.
- Replication showed statistically similar results.
- Found that RR altered the expression of 1,561 genes, including those implicated in inflammation, programmed cell death, and the scavenging of free radicals.



31

Prostate Cancer Study

- A potential cure for cancer was announced recently in the Proceedings of the National Academy of Science (Ornish, 2008)
- Research team took 30 men with prostate cancer and gave them a wonder drug.
- In just three months their PSA levels had dropped significantly, and they were healthier on all other measures of wellbeing.
- 501 genes had changed expression. Oncogenes had been downregulated, immune and stress genes upregulated.
- What was the wonder drug called?




32

The Wonder Drug is...

Meditation
Exercise
Low Fat Diet

Stress reduction techniques like meditation, relaxation and energy medicine send epigenetic signals to the body.


We've been looking for the "magic bullet" cure in the War On Cancer for 40 years "out there." But just like wars are won or lost in the hearts and minds of the civilian population as much as on the battlefield, our wars against disease are won or lost in our consciousness, our behaviors, our own hearts and minds, as much as in our magnificent biomedical research advances.



33

EFT Science Explanation #1: Epigenetics

- Brains of schizophrenics show methylation/acetylation of their stress-dampening genes.
- So the first explanation for EFTs apparently miraculous rapid effects is epigenetics. EFT appears to be increasing the expression of our stress-dampening genes, and silencing our stress genes.
- "Dave's Fear of Water" (EFT) or "Mary" (TFT) can be explained in terms of tapping providing an epigenetic signal to their stress genes.




34

EFT Scientific Explanation #2: Evo Bio

Why did our bodies evolve the ability to respond so fast?
Response speed was essential to survival.

The new scientific field of Evolutionary Biology looks to evolution to explain why biology functions the way it does.


Evolution has given us excellent mechanisms for translating *external environmental* signals (objective threats) into *internal environmental* signals (cellular communication via genes, hormones & electromagnetic flux)



35

Rapid Response to Threats to Survival

- We need the ability to respond to threats to our survival, and respond very fast.
- We need to have our cells make stress response hormones like adrenaline and cortisol very quickly.



36

Objective Stress

Objective Threats Faced by Your Ancestors

37

Or a Subjective Perception

Our body converts either to a molecular signal

38

Signal can be Emotional

- If baby rats were nurtured as infants in the nest (licking and grooming by the mother), they showed greater better ability to handle stress as adults (Moshe Szyf).

39

Signal Can Be Electromagnetic

Here's where the old "Energy" explanatory model of EFT (from TFT) fits in

- Electrical and magnetic fields influence cells epigenetically.
- Each cell, organ & system has a field.
- Cells use electromagnetic signals to communicate.
- Diseased organs and tissues have a different charge to healthy ones. Electromagnetic signature is an indicator of potential health-span.

University of Nottingham
Helical fMRI Image

40

Ancient Energy Portraits

China
2200 years ago

Field effects have been understood in healing for thousands of years

41

Your Heart's Field

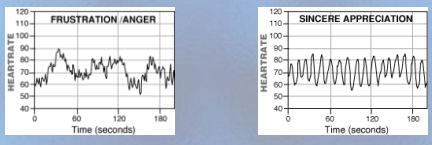
Our heart has the strongest electromagnetic field of any organ of our body. It extends about 15 feet out. It is shaped like a torus. Other people within range are affected by the field, the way that iron filings are affected between two magnets.

Willem Einthoven won the Nobel Prize in 1924 for discovering it.

More sensitive instruments allowed the brain's field, and the fields of other organs, to be mapped from the 1920s on.

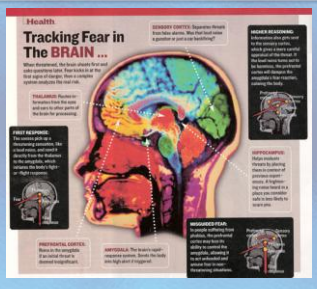
42

Psychology is Physiology

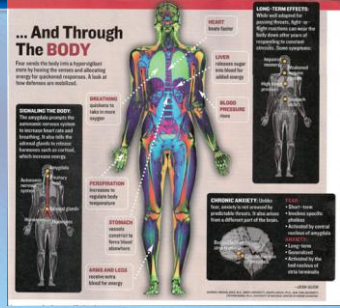


Electromagnetic signals sent out by autonomic nervous system when subject is experiencing anger and appreciation. HRV (Heart Rate Variability) changes moment by moment depending on emotional states. Correlates with the stress hormone cortisol.

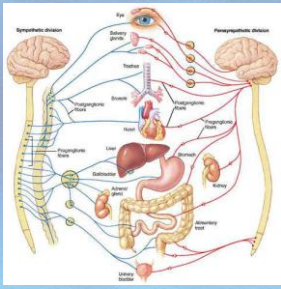
What Fight or Flight Looks Like 1



What Fight or Flight Looks Like 2



Sympathetic and Para Nervous Syst



Massive Shift in Resources

- Away from non essential systems (digestion, reproduction, immunity, cell regeneration, memory)
- To essential FF systems (increased heart rate & blood pressure, increased respiration, peripheral muscles, sweating, release of glucose by liver into bloodstream)
- Highly adaptive for responding to immediate short term objective threats like being chased by a predator



EFT Science explanation # 3: HRV & ANS

- So when a client is triggered by an emotional memory, the sympathetic branch of the ANS is activated.
- When you then use EFT, the ANS regulates. The sympathetic nervous system (stress) deactivates, and the parasympathetic nervous system (relaxation) activates.



EFT Science explanation # 4: Brain Waves

- We have several levels of brain waves, from very slow waves to very fast. Measured with EEG.
- Delta 0 – 4 cycles per second (Hertz / Hz)
- Theta 4 – 7 Hz
- Alpha 8 – 13 Hz
- Beta 13 – 14 Hz
- When we're stressed and frantic EEG signals pick up a lot of Beta, very little Delta and Theta. Characteristic of activation of the Sympathetic Nervous System.

49



Brain Waves After EFT

- When you're relaxed, the slower frequencies predominate. Also characteristic of creative states, deep sleep. Parasympathetic Nervous System is dominant.
- After EFT, more Delta & Theta, little Beta.

50



EFT Science #5: Neurotransmitters

- Psychoneuroimmunology (PNI). New field of science, began in the 1980s.
- Chemicals which transmit signals between cells in the nervous system and other systems.
- Excitatory neurotransmitters and inhibitory neurotransmitters.
- Dopamine and serotonin. Main examples today.
- Others not covered today, but similar principle: GABA, acetylcholine, melatonin, norepinephrine.

51



Stress and Neurotransmitters

- Dopamine: "Go get it!"
- Serotonin: "Aaah, relax, got it!"
- When we're stressed, levels of excitatory neurotransmitters like dopamine rise. Characteristic of sympathetic nervous system.
- In response to these heightened levels, the body starts to produce more inhibitory neurotransmitters like serotonin.

52



Stress and Neurotransmitters

- When we're relaxed, levels of both excitatory and inhibitory neurotransmitters drop, and come into balance. Characteristic of parasympathetic nervous system.
- When EFT releases stress, neurotransmitter levels can balance; adequate dopamine, adequate serotonin. Alert but restful.
- EFT Science explanation # 5: The new scientific field of PNI, which describes how molecular neurotransmitters mediate emotion, the immune system, and the stress response.

53



EFT Scientific Explanation #6: Hormones

- What's happening with hormones during the threat response?
- EFT scientific explanation #6: Endocrinology.
- Endocrine glands secrete hormones, and the level of hormonal secretion changes with stress and relaxation levels.
- Cortisol and DHEA covered today. But many other hormones too.

54



www.SoulMedicineInstitute.org

Cell Repair or Breakdown

Your body is very efficient, synthesizing and breaking down billions of protein molecules every second.

- Either you're stressing, in fight or flight, engaging those 100 IEGs to signal body to make cortisol, OR
- You're using one of those epigenetic stress reduction techniques like EP or visualization to signal your IEGs to break down cortisol and make DHEA for cell repair.

55

DHEA - Cortisol Homeostasis

Our body is constantly shifting the usage of resources in one direction or another, depending on the signals being received

56

Stress = Aging

Chronic Cortisol Elevation Contributes To:

- High blood pressure
- Reduced memory & learning
- High blood sugar
- Heart disease
- Diminished cell repair
- Accelerated aging
- Slower wound healing
- Reduced bone repair
- Decreased circulating immune cells
- Diminished immune antibodies
- Death of brain cells
- Reduced muscle mass
- Decreased skin cell repair
- Increased fat deposits around waist/hips
- Osteoporosis

57

ACE Study

Kaiser's massive ACE study (Adverse Childhood Experiences, 17,400 subjects) showed that 50 years later, people not nurtured as children had a higher incidence of

- Hypertension
- Heart Disease
- Cancer
- Bone Fractures
- Smoking
- Diabetes
- Suicide
- Drug Use

58

Cortisol Changes with EFT

Treatment	After Treatment (Red)	Before Treatment (Green)
EFT	~20	~20
Psychotherapy	~25	~15
No Treatment	~25	~15

This is preliminary data from a pilot trial of 34 subjects and is suggestive only.

www.SoulMedicineInstitute.org

59

EFT Science #7: Neural Plasticity

- One of the most amazing discoveries of new science is that our brains change rapidly, second by second.
- The old model was that the brain grew till age 17, and was then static throughout adulthood.
- The new model is "brains on the boil," with millions of new connections being made every second.
- Neural pathways are being re-shaped every moment, in response to our thinking, feeling, and environmental stimulus.

60

Neural Connections Double in an Hour

- Eric Kandel, Nobel Prize 2000. Synaptic connections can double within an hour of repeat stimulation.
- Decay after 2 weeks of non-use.
- Brains are being rewired all the time, depending on how we use them.



61

The Conditioned Feedback Loop

- Pavlov's dogs.
- Repeated recall of an old trauma reinforces the conditioned feedback loop. Flashbacks, nightmares, intrusive thoughts, are 3 of the diagnostic criteria for PTSD.
- How does effective psychotherapy change the pattern?



62

EFT Resolves Emotional Trauma

EFT uses techniques from two well-established therapies (institute of Medicine 2007 Review):

1. Exposure Therapy (facing the painful fact): "Even though I (exposure to trauma)..."
2. CBT / Cognitive Behavior Therapy. The self-acceptance statement is an example of cognitive change, pairing exposure with acceptance: "... I deeply and completely accept myself."

EFTs novelty is that it combines them with somatic stimulation. Tapping or touching acupressure points tells the body it's safe, that there's no real objective threat. You would not be tapping if you were being chased by a tiger!



64

EFT Creates New Neural Connections

- Counterconditioning. New stimulus. Acupoints with exposure to old trauma. Breaks the cycle.
- EFT Science Explanation #7. Brains are neuroplastic, conditioned responses change rapidly with EFT.



64

Why EFT Affects So Many Conditions

- Bottom line: The body wears out more quickly if resources are continually diverted to stress.
- Health-span is the part of our life span spent in health.
- If we release our stresses many times a day, we lower cortisol, and all the aging effects it indicates.
- That's why the emotionally stressed people in the ACE study had disease outcomes many years later.
- That's also why EFT affects so many different conditions like sports performance, business productivity, anxiety, depression, phobias, etc



65

Integrative Medicine Journal



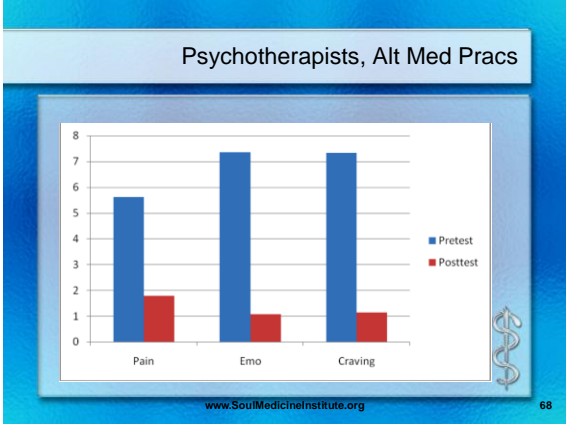
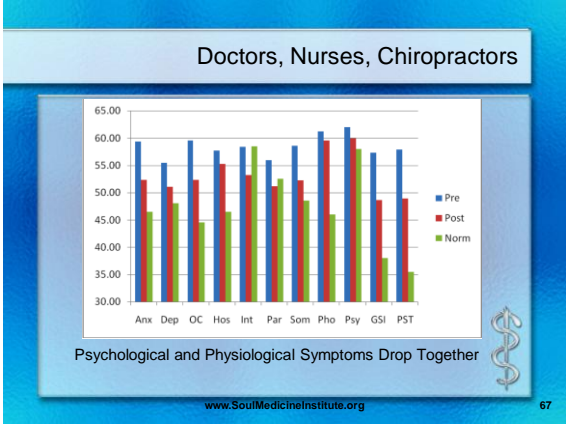
The Effect of a Brief EFT (Emotional Freedom Techniques) Self-Intervention on Anxiety, Depression, Pain and Cravings in Healthcare Workers

Dawson Church, PhD, Foundation for Epigenetic Medicine
Audrey Brooks, PhD, University of Arizona, Tucson, Psychology Dept



www.SoulMedicineInstitute.org

66



From Just 2 Hours of Group EFT

"Significant improvements were found on all distress subscales and ratings of pain, emotional distress, and cravings at posttest (all $p < .001$). Gains were maintained at follow-up for most SA-45 scales. The severity of psychological symptoms was reduced (-45%, $p < .001$) as well as the breadth (-40%, $p < .001$), with significant gains maintained at follow-up. Greater subsequent EFT use correlated with a greater decrease in symptom severity at follow-up ($p < .034$, $r = .199$)"

www.SoulMedicineInstitute.org

Hmm, How about Iraq/Afghan Vets?

With a group of volunteer therapists, I launched a nationwide initiative to deliver these treatments, free of charge, to Vietnam, Iraq and Afghanistan veterans suffering from PTSD. The Institute of Medicine estimates there are 300,000 Iraq vets with PTSD. It's called the Iraq Vets Stress Project.

(www.StressProject.org)

www.SoulMedicineInstitute.org

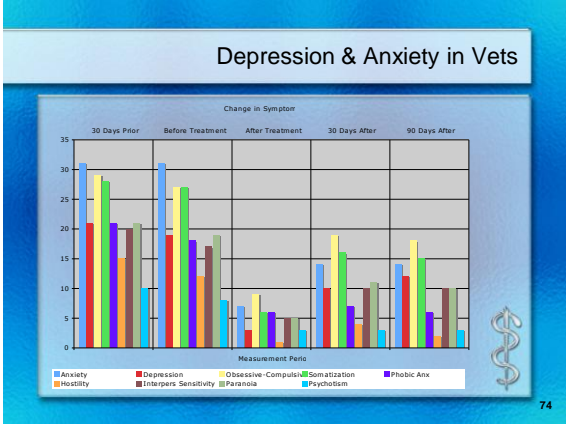
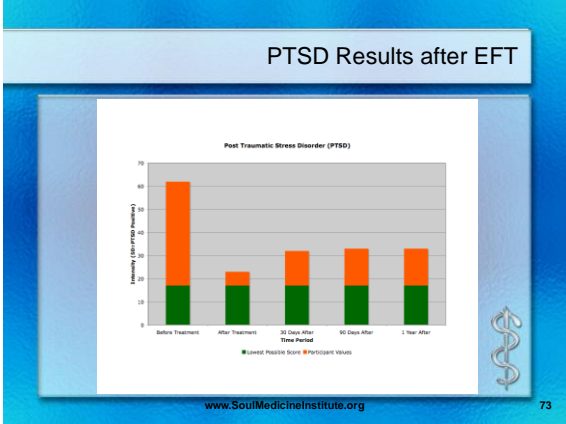
- ### Typical Results
- Improved sleep
 - Lower reported stress levels
 - Lower levels of anxiety, depression, PTSD
 - Improvement of digestive difficulties
 - Better immune response
 - Improved social functioning
 - Improved sexual functioning
 - Greater mental clarity
- EFT affects all these problems because it works throughout all the body's systems
- www.SoulMedicineInstitute.org

Traumatology Journal

The Treatment of Combat Trauma in Veterans using EFT (Emotional Freedom Techniques): A Pilot Protocol

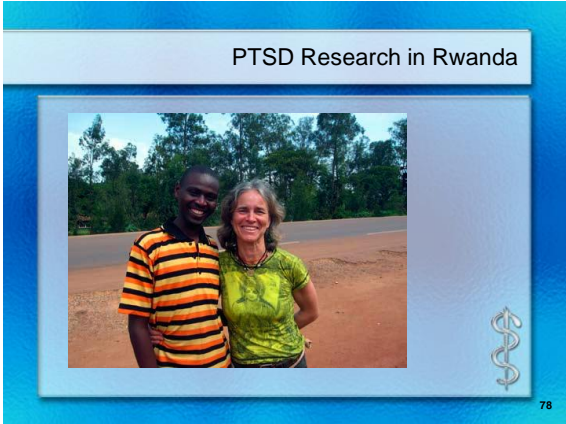
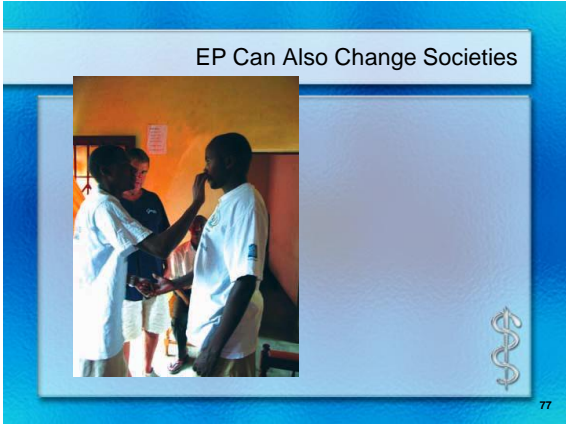
Dawson Church, PhD, Foundation for Epigenetic Medicine

www.SoulMedicineInstitute.org



- ### Peak Performers: What Happens?
- Most studies are of psychological or physiological limitation. What happens when you apply these methods to healthy, high performing individuals?
 - Randomized Controlled Trial of male and female basketball teams at Oregon State University (Church 2008).
 - Measured free throws and jump height before and after EFT and a placebo treatment.
 - Difference in free throws between control and experimental groups after tx was 38%.
 - Length of intervention was only 15 minutes! (Simulation of a basketball game).

- ### So We've Reviewed
- Epigenetic Explanation for EFT: Immediate Early Genes, Stress Genes, Gene Silencing
 - Evolutionary Biology Explanation of EFT: Responding to Threats To Survival
 - Autonomic Nervous System Explanation for EFT: Sympathetic Nervous System, HRV
 - Brain Wave Explanation for EFT: More Alpha and Delta, less Beta.
 - Neurotransmitter Explanation of EFT: Dopamine, Serotonin
 - Hormonal Explanation of EFT: Cortisol, Adrenaline
 - Neural Plasticity Explanation for EFT: Neural Bundles Reconfiguring Themselves
 - These "connect" much better with physicians, psychiatrists, biologists, physiologists, psychologists, nurses, hospital administrators.



EFT can Change Societies



Letter to Soul Medicine Institute from Robert, 25, via Gunilla Hamne. He lost both parents, five brothers and sisters

Before treatment it was a long time without sleeping. When I tried to sleep my dreams come very bad. I was dreaming every night about genocide in 1994. I could not feel good. I did not think I can be a man. I used to hate people without reasons. I always thought that my life is nothing. I don't have any future. I used the traditional counseling. I still had no hopes, no belief in myself, no peace in my heart. Even though genocide was finished, I still live in it every night in my dreams. To forgive was very hard for me. I want to thank you for the energy treatment you gave.

But your treatment has changed me to be very nice. Now I can sleep well. I feel closeness with my family and my beloved ones that died in that time. I believe that my future will be planned as God wishes. I don't have any bad dreams like before. I got peace in my heart, I'm not afraid of people like before. I enjoy my life. Now, when I have a problem, I treat myself.



The EFT Community Funds Research

We put out a call on the EFT newsletter, and members of the EFT community have now pledged close to \$30,000 to cover the costs of an EFT gene chip study. This supplements the \$200,000 of volunteer time we've had pledged to the project.



EFT Humanitarian Committee

- Imagine the kind of world we'd have if every child was taught to release emotional stress, and if whole societies lessened their level of emotional trauma.
- Informally, EFT volunteers have visited disaster areas, to work with traumatized populations today. I would like to see us have teams of hundreds of trained volunteers we can despatch to Haiti, Pakistan, Palestine, and similar areas.
- Now forming an EFT humanitarian committee on www.EFTUniverse.com, will announce in EFT newsletter.
- The first step is to work on yourself. Love yourself fully, by releasing every negative thought, every triggered emotional reaction to others, every old hurt and wound. Don't tolerate a moment's negativity from any part of yourself! Release it with EFT.
- You will then be a peaceful presence in the world.



EFT is Good Science

- When you're presenting EFT, know that it is grounded in good science.
- The old "magical" energy explanations are still valid, but they don't connect with modern ideas well, so use the new science explanations for EFT.
- Look at the research pages on www.EFTUniverse.com for updates.
- Studies, and the humanitarian committee, will be announced in the weekly newsletter.



EFT Research

The EFT Research Pages & Community Resources:
www.EFTUniverse.com

The Iraq Vets Stress Project
www.StressProject.org

