

**Interspecies Energy Donation: How Direct Steady Touch with an Animal Influences the
Human Energetic System**

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Interspecies Energy Donation: How Direct Steady Touch with an Animal Influences the

Human Energetic System

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June 18, 2020

Approval Date

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Dissertation submitted in partial fulfillment of the requirements for the degree of

Doctorate and PhD in Natural Medicine

Master in Natural Medicine

in the Department of Integrative Medicine, in the Graduate School of

International Quantum University of Integrative Medicine

2020

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Abstract

Prior research has shown that animals positively affect humans on various discrete levels. This paper investigates further, by exploring the fundamental electromagnetic connection between animals and humans, and examines how direct steady touch with an animal, as a consequence of that fundamental connection, results in interspecies energy transmission that measurably influences multiple levels of the human energetic system (HES). Gas Discharge Visualization (GDV) was utilized to capture and analyze the HES for 18 subjects (n=18) before and during direct steady touch with a dog or a horse. The GDV data from 34 scans revealed an immediate energy donation from the animal to the human, positively modifying selected variables within the HES including: average energy distribution, average chakra size/activation, stress, energy reserves, balance within the autonomic nervous system, and energy within the immune system. Improved psychophysiological functioning occurred immediately for all 18 subjects, in four or more of the six measures tested. The phenomenon of interspecies energy donation requires further research in order to fully discern potential benefits and longevity of the effects.

Dedication

To Comet, Twenty, Chewy, Gato, Cody, Gus, Cooper, Gracie, Jax, Lily, Tigger, Winnie,
Rosebud, Bodhi, Chief, and Capone.

Table of Contents

Abstract	4
Dedication	5
List of Figures	10
List of Tables	14
Preface.....	15
Chapter 1: Introduction	15
Background	16
Statement of the Problem.....	20
The Purpose of this Study	21
Chapter 2: Foundations	21
Origins.....	21
Energy	22
Classical Physics.....	26
Quantum Physics	27
Quantum Medicine.....	30
Chapter 3: Energy Transmission.....	33
Potential Mechanisms of Action for Energy Donation.....	33
Chapter 4: Measuring Subtle Energies	42
Detection and Measurement	42

Bio-Well.....	43
Chapter 5: Literature Review	49
Literature of Interest	49
TCM Meridians.....	50
Chakras/Energy Centers.....	53
Stress	57
Gas Discharge Visualization (GDV)	60
Touch	65
Animals as Medicine.....	72
Chapter 6: Methods and Materials	88
Methodology	88
Research Design.....	88
Variables	88
Sample Size and Selection	90
Data Collection and Tools	90
Standards of Time and Measurement	91
Research Study Procedures.....	91
Pre-Test	91
DST with Dogs	92
DST with Horses.....	93

Ethical Considerations	94
Chapter 7: Data Analysis and Results.....	94
Qualitative Results: Case Reports.....	95
Case Report: Subject 109.....	95
Case Report Discussion: Subject 109	99
Case Report: Subject 102.....	100
Case Report Discussion: Subject 102	104
Case Report: Subject 117.....	105
Case Report Discussion: Subject 117	109
Case Report: Subject 101.....	110
Case Report Discussion	114
Case Report: Subject 120.....	115
Case Report Discussion	119
Case Report: Subject 108:.....	120
Case Report Discussion	124
Case Report: Subject 104:.....	125
Case Report Discussion	129
Case Report: Subject 107.....	130
Case Report Discussion	134
Demographics	135

Quantitative Data Analysis	135
Findings.....	137
Repeatability and Reliability.....	144
Chapter 8: Discussion	146
Observations	146
Conclusion	152
Recommendations for Future Research	153
References	154

List of Figures

<i>Figure 1.</i> Interconnected electromagnetic energy fields.....	35
<i>Figure 2.</i> Interconnected cardiac fields	39
<i>Figure 3.</i> Human/canine heart coherence	40
<i>Figure 4.</i> Human/equine heart coherence	41
<i>Figure 5.</i> Meridians.	50
<i>Figure 6.</i> Chakras.....	54
<i>Figure 7.</i> Thought detection using gas discharge visualization.....	62
<i>Figure 8:</i> Subject 109 Energy Field Distribution.	95
<i>Figure 9:</i> Subject 109 Stress.	96
<i>Figure 10:</i> Subject 109 Average Chakra Size/Activation.....	96
<i>Figure 11:</i> Subject 109 Organ System Balance Baseline	97
<i>Figure 12:</i> Subject 109 Organ System Balance DST	97
<i>Figure 13:</i> Subject 109 Energy Reserves Baseline.....	98
<i>Figure 14:</i> Subject 109 Energy Reserves DST	98
<i>Figure 15:</i> Subject 109 Immune System Energy.....	99
<i>Figure 16:</i> Subject 102 Energy Field Distribution	100
<i>Figure 17:</i> Subject 102 Stress.	101
<i>Figure 18:</i> Subject 102 Average Chakra/Size Activation.....	101
<i>Figure 19:</i> Subject 102 Organ System Balance Baseline	102
<i>Figure 20:</i> Subject 102 Organ System Balance DST	102
<i>Figure 21:</i> Subject 102 Energy Reserves Baseline.....	103
<i>Figure 22:</i> Subject 102 Energy Reserves DST	103

<i>Figure 23: Subject 102 Immune System Energy</i>	104
<i>Figure 24: Subject 117 Energy Field Distribution.</i>	105
<i>Figure 25: Subject 117 Stress.....</i>	106
<i>Figure 26: Subject 117 Average Chakra Size/Activation.....</i>	106
<i>Figure 27: Subject 117 Organ System Balance Baseline</i>	107
<i>Figure 28: Subject 117 Organ System Balance DST</i>	107
<i>Figure 29: Subject 117 Energy Reserves Baseline.....</i>	108
<i>Figure 30: Subject 117 Energy Reserves DST</i>	108
<i>Figure 31: Subject 117 Immune System Energy</i>	109
<i>Figure 32: Subject 101 Energy Field Distribution</i>	110
<i>Figure 33. Subject 101 Stress</i>	111
<i>Figure 34: Subject 101 Average Chakra Size/Activation</i>	111
<i>Figure 35: Subject 101 Organ System Balance Baseline.....</i>	112
<i>Figure 36. Subject 101 Organ System Balance DST</i>	112
<i>Figure 37. Subject 101 Energy Reserves Baseline</i>	113
<i>Figure 38. Subject 101 Energy Reserves DST</i>	113
<i>Figure 39: Subject 101 Immune System Energy.....</i>	114
<i>Figure 40. Subject 120 Enery Field Distribution.....</i>	115
<i>Figure 41: Subject 120 Stress.....</i>	116
<i>Figure 42. Subject 120 Average Chakra Size/Activation.....</i>	116
<i>Figure 43. Subject 120 Organ System Balance Baseline.</i>	117
<i>Figure 44. Subject 120 Organ System Balance DST.</i>	117
<i>Figure 45. Subjet 120 Energy Reserves Baseline.....</i>	118

<i>Figure 46. Subject 120 Energy Reserves DST</i>	118
<i>Figure 47: Subject 120 Immune System Energy</i>	119
<i>Figure 48. Subject 108 Energy Field Distribution.....</i>	120
<i>Figure 49: Subject 108 Stress.</i>	121
<i>Figure 50. Subject 108 Average Chakra Size/Activation.....</i>	121
<i>Figure 51. Subject 108 Organ System Balance Baseline</i>	122
<i>Figure 52. Subject 108 Organ System Balance DST.</i>	122
<i>Figure 53. Subject 108 Energy Reserves Baseline</i>	123
<i>Figure 54. Subject 108 Energy Reserves DST</i>	123
<i>Figure 55. Subject 108 Immune System Energy</i>	124
<i>Figure 56. Subject 104 Energy Field Distribution.....</i>	125
<i>Figure 57. Subject 104 Stress</i>	126
<i>Figure 58. Subject 104 Average Chakra Size/Activation.....</i>	126
<i>Figure 59. Subject 104 Organ System Balance Baseline</i>	127
<i>Figure 60. Subject 104 Organ System Balance DST.</i>	127
<i>Figure 61. Subject 104 Energy Reserves Baseline</i>	128
<i>Figure 62. Subject 104 Energy Reserves DST</i>	128
<i>Figure 63. Subject 104 Immune System Energy</i>	129
<i>Figure 64. Subject 107 Energy Field Distribution.....</i>	130
<i>Figure 65. Subject 104 Stress</i>	131
<i>Figure 66. Subject 104 Average Chakra Size/Activation.....</i>	131
<i>Figure 67. Subject 104 Organ System Balance Baseline</i>	132
<i>Figure 68. Subject 104 Organ System Balance DST</i>	132

<i>Figure 69. Subject 104 Energy Reserves Baseline</i>	133
<i>Figure 70. Subject 104 Energy Reserves DST</i>	133
<i>Figure 71. Subject 104 Immune System Energy</i>	134
<i>Figure 72: Comprehensive Results: Energy Field Distribution.</i>	138
<i>Figure 73. Consolidated Results: Energy Field Distribution</i>	138
<i>Figure 74: Comprehensive Results: Average Chakra Size/Activation</i>	139
<i>Figure 75: Consolidated Results: Average Chakra Size/Activation</i>	139
<i>Figure 76: Comprehensive Results: Stress.</i>	140
<i>Figure 77: Consolidated Results: Stress</i>	140
<i>Figure 78: Comprehensive Results: Energy Reserves</i>	141
<i>Figure 79: Consolidated Results: Energy Reserves</i>	141
<i>Figure 80: Comprehensive Results: Organ System Balance.</i>	142
<i>Figure 81: Consolidated Results: Organ System Balance.</i>	142
<i>Figure 82: Comprehensive Results: Immune System Energy</i>	143
<i>Figure 83: Consolidated Results: Immune System.</i>	143

List of Tables

Table 1: Demographics	135
Table 2: t-test results	136
Table 3: Wilcoxon Matched Pairs test results.....	136
Table 4: <i>p</i> values verification.....	137
Table 5: Repeatability and reliability for Energy Distribution and Average Chakra Size	144
Table 6: Repeatability and reliability for Stress and Organ System Balance	145
Table 7: Repeatability and reliability for Energy Reserves and Immune System	146

Interspecies Energy Donation: How Direct Touch with an Animal Influences the Human Energetic System

Preface

Imagine that 67% of all US homes already contain an incredibly powerful form of natural medicine. A panacea that provides broad energetic benefits to humans both young and old. A universal remedy that generates positive outcomes on multiple levels, including body, mind, and spirit. A remedy with no ill side-effects, and one that is appropriate for use in conjunction with all other forms of conventional and alternative medicine. This potent therapeutic tool exists, yet most humans have not thought to tap into it as a regular ameliorative resource, despite the fact that it has been readily available and easily procurable for centuries. What is this restorative? The furry, four-legged at your feet, or the gentle giant under saddle. Dogs and horses have the extraordinary ability to donate energy to us through direct, steady touch. This phenomenological donation provides notable, beneficial changes within the human energetic system, and these changes are both observable and measurable.

Chapter 1: Introduction

Introduction

Animals and humans have cohabitated on earth since the beginning of time; meaningful, affectionate relationships are more common among certain species, though. Horses and dogs, for example, are natural companions to humans as they are social, affable, and loyal. Successful relationships between these distinct beings have centered upon labor-oriented endeavors (i.e.,

horses pulling wagons), pleasurable activities (i.e., horse-back riding), and simple, earnest companionship (i.e., dog as man's best friend). We are learning, however, that animals' effects on humans are much greater than laborious service or loving devotion. Scientifically, we can now demonstrate that horses and dogs are able to share energy that alters the human energetic system in beneficial ways.

Both humans and animals are comprised of vibrational energy fields and vital principle or life force. Quantum physics has revealed that these fields and intrinsic essential force are derived from same electromagnetic source. This paper examines that innate commonality as means for interspecies energy donation. Further, it discusses touch as a mechanism of conveyance, as well as the various conduits that support incoming energy, including chakras and Traditional Chinese Medicine meridians. Dogs and horses are natural, gentle healers, and their documented therapeutic abilities will show that they influence health from the quantum model that incorporates subtle energies, supporting the human energetic system holistically. Finally, evidenced-based data, collected through gas-discharge visualization, will illustrate how energy donation from an animal positively affects numerous aspects of the human energetic system, improving health from a natural medicine perspective.

Background

In the 1970s, ancient canine remains were found in the Altay Mountains in southern Siberia. Through sophisticated radiocarbon dating, researchers were recently able to confirm that the bones were approximately 33,000 years old. These remains are much older than other fossilized canine remains on record, which usually date to approximately 14,000 years ago. This historical anecdote gets more intriguing because the researchers concluded from the skull, jaw, and

additional evidence at the site that this ancient dog was a domesticated pet that lived with the humans in the area. (Dell'Amore, 2011) Later, DNA samples from one of the dog's teeth were compared to 207 other breeds including wolves, coyotes, prehistoric canines and domesticated dogs, and the tests confirmed that the ancient canine's DNA was most closely related to that of modern domestic dogs. (Druzhkova et al., 2013) Even prehistoric humans understood the special bond that can occur with a dog, as they chose to include the dog in their lives, rather than consume it at a time when food was scarce.

People love dogs. Currently, 89.7 million dogs live in 63.4 million homes in the United States. ("Pet Stats," n.d.) Dogs engage with us; they are interested in us; they love us unconditionally; and it has been aptly noted that they “possess mastery of their owners’ hearts.” (Kirk, 2019, para. 1) Dogs are ready, willing, and eager to please their human companions, and watch for clues on how to accomplish the task. They gaze, vocalize, make facial expressions, and touch us as methods of communication. Besides warm, fuzzy, devotional, entertaining companionship, the human-dog interaction is significant and quite complex, and studies have shown that this interaction positively affects human health, measurably, both physiologically and psychologically. (Friedman, 1995; Headey, 2007; O'Haire, 2010)

Dogs are not singular champions in delivering therapeutic value to their human counterparts. Horses have contributed significantly to human development and expansion on this planet, yet they are often idealized more as mystical, regal creatures with magical powers. Horses relate to humans differently than dogs. As prey animals, they are reserved in their approach to relationships with other species. Dismissing exuberant attentiveness, they observe, sense, and respond to energy and non-verbal cues with 180-degree vision and massive energy fields. “These powerful yet vulnerable creatures have a large limbic system, the part of the brain

responsible for emotion and intuition, which greatly contributes to their keen ability to detect danger. Perhaps most importantly, this also plays a part in their heightened sensitivity to human emotion, body language, and energy.” (Letson, 2014, para. 3) Unlike dogs, horses have fewer methods to overtly communicate with humans. But they do communicate, and powerfully, by reflecting and mirroring energetic signals. Like dogs, they also positively influence human psychophysiology, in ways that are measurable and meaningful, including strengthening the body and aiding with depression, trauma, and other psychiatric illnesses. (Fujimura & Nommensen, 2018; Romaniuk, Evans, & Kidd, 2018) Currently 1.6 million US homes have at least one horse. ("Pet Stats," n.d.)

Are dogs and horses special compared to other “pets”? Presumably. They are, in fact, the two most commonly studied domestic animals, and for good reason: they are both able to read human emotions. Not only can dogs recognize human facial expressions (Muller, Schmitt, Barber, & Huber, 2015), they are also able to respond empathetically to humans in distress. (Custance & Mayer, 2012) Horses are also able to give appropriate responses when presented with examples of differing facial expressions, meaning that not only do they recognize expressions, but they are able to perceive the emotion associated with the expression and remember it later. (Smith, Proops, Grounds, Wathan, & McComb, 2016) Besides sharing center-stage for scientific scrutiny, dogs and horses are also the two most common animals used in pet therapy. *Animal therapy* is a broad term encompassing *animal-assisted therapy* (AAT), and other animal-assisted activities and interventions that generally involve a health professional. ("Pet therapy," 2008, para. 2) This includes counseling sessions, training programs in prisons, and therapeutic riding. *Pet therapy* differs from AAT, in that it can be carried out by an animal escort, handler, or even an owner. Pet therapy activities incline toward hospital and classroom

visitations, rehabilitation and senior center visits. Research involving dogs and horses in pet therapy and AAT has demonstrated that this Human-Animal Interaction (HAI) does, in fact, alter human health in beneficial ways including: lowering blood pressure, decreasing depression and anxiety, decreasing heart rate, decreasing loneliness, and increasing perceived quality of health. (Friedman 1995; Morrison 2007; Palley, O'Rourke, & Nieme 2009) Further studies have evidenced that humans benefit from an increase in life expectancy, an increase in oxytocin, and increased general well-being during and after interaction with animals. (Handlin et al., 2011) Horses help war veterans recover from post-traumatic stress disorder (PTSD) by altering their biochemistry through mindfulness training, which includes learning to concentrate on the present moment. (Raia, 2018) Women report feeling more comfort and security sleeping with a dog than with a human companion. (Becker, 2019) Despite numerous benefits and a growing body of empirical research, conventional medicine has not yet accepted animal therapy as a credible or efficacious form of medicine.

Casual pet owners and self-professed animal lovers may not be overly concerned about scholarly research, empiric results, or the shortsighted tenets of conventional medicine; instead, they already know that their pets are one of the best and most fulfilling aspects of their lives. A 2012 Harris Poll showed 95% of pet owners considered pets as family members. ("Harris Poll #41," 2015, para. 2) Some humans actually prefer relationships with animals over those with other humans. (Anderson, 2015) Domestic pets, or cherished family members, are often described as the light of one's life. There is something more profound to this sweet euphemism than sentiment—light, literally, is electromagnetic, vibrational energy. All living beings are made from, emit, and communicate with light. Therefore, humans, horses, and dogs have a

common denominator, or energetic connection, from inception. This connection allows each to influence the other energetically.

Statement of the Problem

The positive effects animals have on human beings, both emotionally and physiologically, are compelling and documented (Allen, Shykoff, & Izzo, Jr, 2001; Branson, Boss, Cron, & Kang, 2016; Nawrocka-Rohnka, Marcinkowski, & Samborski, 2011; Pop et al., 2014; Serpell, 1991; Trembath & Patterson-Kane, 2015; Vagnoli et al., 2014; Virues-Ortega & Buela-Casal, 2006) Despite decidedly impressive, albeit minimal empirical results, human-animal studies have faced opposition or outright dismissal because they strayed from the rigid doctrine and traditional pharmacologic interventions typical of Western medicine. Additionally, current published research is insufficient due to its limited focus on specific biochemical alterations or mental health improvements recorded through self-report measures. Absent is consideration of the entirety of the beings consisting of mind, body, and spirit, all of which originate from, and consist of, fields of electromagnetic, vibrational frequencies. Energetically, the connection between humans and animals is much greater than we've recognized (or remembered) in contemporary times, and established studies have failed to recognize this ancient vibrational affiliation. Further, these studies have excluded direct, steady touch as a consideration for the measurable changes to the human energetic system, which can now be detected and evaluated in real time.

The Purpose of this Study

Dogs and horses are intrinsically connected, or entangled with humans through electromagnetism. Accordingly, they have an innate ability to interact with and actively influence the human energetic system, which consists of numerous, linked fields of energy. “We are networks of complex energy fields that interface with [all] physical/cellular systems.” (Gerber, 2001, p. 39) This mixed methods study will discuss how humans, dogs, and horses are energetically connected through electromagnetism; and it will confirm that direct, steady touch with an animal notably influences the human energetic system for both animal lovers and non-animal people. Using portable gas discharge visualization, it will provide pictorial and statistical representations of direct interspecies energy transfer on select parameters including average energy, average chakra size, stress level, organ system imbalance within the autonomic nervous system (ANS), functional energy reserves and immunity.

Chapter 2: Foundations

Essential foundations exist that substantiate the elemental electromagnetic connection between humans and animals. A brief review of these fundamental foundations follows.

Origins

How life originated is an important factor in the consequential connection between living beings. The two most common models that postulate how the universe and life came to be are, Creationism and the Big Bang Theory. Many believe in Creationism, or the notion that a

preexistent God created everything, including the skies, galaxies, stars, moons, and all life on earth. Alternatively, the Big Bang Theory states that the universe was created by a huge, single explosion of energy and light, where life on earth came later and developed over time, through evolution. These theories, and others, have one key concept in common: at some given point, a singular, creative, electromagnetic, vibrational event occurred that allowed existence/consciousness as we know it, to begin. In other words, all energy, all resultant matter, and all potentialities, were birthed, or originated from one source (aka Source Energy). Consequently, our energy fields, our electromagnetic forces, are inherently connected and related from that initial instance, or birth. Much like siblings share DNA, all living beings share primordial, electromagnetic, vibrational energy.

Energy

Energy can be defined, simply, as “the capacity to produce an effect.” (McCraty, Atkinson, Tomasino, & Tiller, 1998, Introduction pg 2) “It [energy] can be converted in form, but not created or destroyed.” (“Energy,” n.d., para. 1) It is classified into two basic categories: kinetic and potential. Kinetic energy is due to motion; whereas energy that is stored is considered potential. All of what we see (and much that we do not) emits vibrational energy on a scale referred to as the electromagnetic spectrum. (Harris & Freudenrich, 2000) This spectrum is comprised of differing, vibrational fields, or forces of frequency and wavelengths, including heat, sounds, radio waves, radioactive waves, electrical energy, and light. These fields “exert influence at every point...and can carry information.” (Dale, 2009, p. 91) That influence enables

energy to move or modify matter. Both kinetic and potential energies are detectable and measurable.

Measurable energy and matter make up only $\pm 5\%$ of the entire universe as we know it. ("Dark Energy," n.d.) The other $\pm 95\%$ consists of what appears to be empty space. (Strauss, 2015, para. 1) Matter, additionally, although seemingly dense mass that consumes space, is actually composed of 99.999999999999% empty space. (Andeweg, 2016, p. 11) But empty space is anything but empty; rather, it is vibrational, albeit subtle energy. (Riek et al., 2015) Although not easily detectable, subtle energy is, "magnetic in nature, has negative mass and travels faster than the speed of electromagnetic light." (Vithoulkas, 1980, p. xiii) Mind, thoughts, and feelings are also subtle energies that cannot be seen, but are absolutely influential on everything in the universe. Because $\pm 95\%$ of the universe consists of subtle energy, it must be factored in to how living beings interact with the universe and each other. Although modern science is just learning to accurately detect and efficiently measure subtle energy, we know it exists: for thousands of years, using their senses, humans have been able to detect subtle energy fields, and witness the resulting effects, or alterations, in matter. For example, intercessory prayer, which is an intangible, ethereal form of healing, has prompted tangible, meaningful changes in pH levels, oxidation-reduction balance, electric impedance in body fluids in coronary care patients. (Byrd, 1988) This is but one example where the subsequent, observable changes in matter, resulting from subtle energy stimulation, deliver proof that subtle energy fields exist.

Physically, humans, horses, dogs (and all living creatures) are more than the dense bodily formations that we appear to see. Living bodies are actually vibrational, electromagnetic energy, consisting of atoms made up of positively charged particles called protons, neutral (no charge) neutrons, and negatively charged electrons. Atoms bond together to form molecules, which then

form cells, which further organize into organs, tissue, bones, etc. As these cells vibrate and resonate within the quantum field, they take on the form of matter, and continue with electromagnetic vibration. The various particles which make up cells are actually billions of years old, or tiny pieces of ancient Source Energy, “Hydrogen, the most common element in the universe and a major feature of your body, was produced in the big-bang 13.7 billion years ago. Heavier atoms such as carbon and oxygen were forged in stars between 7 billion and 12 billion years ago.” (Clegg, 2013, para. 9) Every living creature contains, and shares a connection through these ancient elements. “At a microscopic level, we are each complex, yet uniquely arranged aggregates of the same particularized universal energy.” (Gerber, 2001, p. 417)

Living bodies also have their own energy fields, both inner and outer, observable and subtle. The term human energetic system (HES) represents the totality of biological, chemical, electromagnetic, and quantum energies within and surrounding body/mind/spirit, and includes: the body (physical form consisting of molecules, cells), the energy around the body (thoughts, feelings and the environment), and consciousness or awareness (connection to limitless potentialities). Also referred to as the biofield, these interconnected fields reflect and influence living biological objects. Dr. Shamini Jain defines the biofield as, “energy and information, both putative and subtle, that regulate the homeo-dynamic function of living organisms and may play a substantial role in understanding and guiding health processes (related to) basic biopsychosocial functions, especially those directing health, healing, and well-being.” (Jain et al., 2015, p. 58) Living beings are much more complex than the sum of their discreet components; rather, each component is dynamic and interrelated within a larger network that facilitates homeostasis through the regulation of biological functioning. The biofield is the “global organizing field of the organism...which requires a look at the human body and health

from a system's perspective...taking into account the subtle energy exchanges among all parts of the system as a whole.” (Edlund, 2003, p. 12)

The HES/biofield is addressed differently within various cultures that, for the most part, view the body as multidimensional. In traditional Chinese medicine (TCM), the body is accessed through a meridional theory, which consists of Qi or life force energy and “a vast network of invisible energy pathways connecting to each other and to every atom, cell, tendon, bone, organ, each centimeter of skin—everything in your body! They link the upper portion with the lower and the surface with the interior, so that nothing is truly separate.” (“Meridians,” n.d., para. 1) The mind is vital to well-being and an integral part of the biofield: “In traditional Chinese medicine (TCM), the mind and emotions are considered just as important as the body when it comes to health and disease. The mind is known as shen and this word can also be translated as ‘spirit.’” (S., 2019, para. 1) In India, the biofield is approached through Ayurveda, which includes the chakras (or the spinning energy centers within the body), prana (or life force energy), and nadis (the subtle body channels through which prana and consciousness flows). “In the subtle body, prana travels through channels called nadis. Nadis are circulatory channels within the body such as veins, arteries, the respiratory system, the nervous system, the digestive system, the excretory system, and the reproductive system. Think of nadis as the information highway to your mind, body, soul, and spirit, just as the Internet is the information highway that brings information to your browser.” (Fondin, 2018, para. 5) In Ayurveda and TCM, clear, well-functioning pathways for energy flow are imperative to health and well-being. “As long as Qi (Energy) flows freely through your meridians and your organs work in harmony, your body can remain healthy.” (“Meridians,” n.d., para. 5) Dr. Amit Goswami has constructed a newer, multifaceted framework called the Five Bodies of Consciousness, which represent the composite

of varying, interconnected layers of the physical and consciousness within the body. ("Five Bodies," n.d.) TCM, Ayurveda, and the Five Bodies of Consciousness each delineate the totality of the HES slightly differently; however, the unifying force in each of these ideologies conceives that the living body is permeated by vital, life force energy and information, that flows through specific, subtle exchanges. How science approaches the energies of living organisms, in relation to the material world, is dependent on size.

Classical Physics

Physics is a branch of science regarding the nature and properties of matter, energy, and how they interact. Classical, or Newtonian physics, uses mathematics to explain the physical universe from a macro or large-scale, continuous, predictable viewpoint that is deterministic. In the most basic sense, it characterizes the universe as a machine, operating with specific, precise rules following an orderly trajectory or flow that is predictable. It is a cause-and-effect relationship founded on the idea of upward causation or material realism; basically, it specifies that brain function and physical reality give rise to consciousness. This linear construct accurately applies to most normal macroscale objects and the certainties of how they respond to forces within the tangible, material world, but it does not address the very small within the universe. (Coolman, 2014) Moreover, classical physics asserts that reality is based exclusively on information perceived from five limited human senses. Anything existing beyond this level of solid, physical perception, does not exist, or at least cannot be of influence. Specifically, reality, or what we are *conscious* of, arises from material realism and upward causation because matter is the basis of the universe. This philosophy is flawed and incomplete since matter is actually

amalgamated vibrational energy that only appears solid. Further, brain function alone does not result in *awareness*: “Brain is inert matter. Brain cannot create any thoughts. Brain can only react to the thoughts which come from outside and then get involved.” (Balsekar, 1992, p. 75)

Therefore, classical mechanics fails to successfully acknowledge or explain non-material phenomena, including subtle energies fields, non-physical sources of illness, and consciousness.

Quantum Physics

Quantum physics, a much younger branch of science, addresses the behavior of nanoscale particles and how they behave very differently than what can be explained through classical mechanics. Particles or discrete quanta (units) of energy exist in a probability state and have wave-particle duality. This means they exist as potentialities only, and can behave as either a particle or a wave. Only when consciously observed or measured can a wave form collapse into one specific state. Until it collapses, all possible states exist. Quantum physics allows for the consideration of possibilities and potentialities, rather than acceding to confined classical certainties.

Electromagnetic radiation, or light energy, consists of quanta, and therefore has wave-particle duality. In wave form, electromagnetic energy actually consists of two waves “oscillating perpendicular to one another. One of the waves is an oscillating magnetic field; the other is an oscillating electric field.” (“Light: Electromagnetic waves,” n.d., para. 2) As waves move through fields, they create disturbances in those fields, resulting in vibrations that are both electric and magnetic. In particle form, a quantum of light is referred to as a photon. Living beings are composed of, and emit light in the form of biophotons (BPE). BPEs, a.k.a. ultraweak

photon emissions (UPE), are quantum, non-thermal, and lay just outside the visible spectrum on the electromagnetic continuum. This was confirmed, definitively, by Fritz-Albert Popp when he and a colleague were able to detect light emanating from a living plant that was kept in absolute darkness.

In an old documentary film taken in the laboratory at the International Institute of Biophysics, Dr. Popp opens a chamber about the size of a bread box. He places a fresh cutting from a plant and a wooden match in a plastic container inside the dark chamber and closed the light proof door. Immediately he switches on the photomultiplier and the image shows up on a computer screen. The match stick is black while the green, glowing silhouette of the leaves is clearly visible. Dr. Popp exclaims, "We now know, today, that man is essentially a being of light. (Vey, n.d.)

Quantum mechanics is further responsible for the concept of entanglement: the lack of independence between particles or systems. (Wilczek, 2016) Entanglement exists outside of the space-time continuum, and occurs when particles interact in a joint state. "Entangled particles remain connected... even when separated by great distances." (Tate, 2013, para. 1) Through wave-particle duality, electrons can occupy multiple positions and multiple states at once, leaping instantaneously from one orbit to another orbit in a discontinuous manner, never touching the space between. The distance, or (non) locality, between entangled particles is not relevant: "Quantum theory tells us that two entangled particles behave as a single physical object, no matter how far apart they are. If a measurement is performed on one of these particles, the state of its distant twin is instantaneously modified." ("Entanglement & Nonlocality," 2012, para. 3) In other words, each particle knows the other's location and

condition, immediately. Nonlocality suggests that the “separate parts of the universe are actually potentially connected in an intimate and immediate way.” (“Nonlocality and Entanglement,” n.d., para. 4) Amit Goswami affirms this notion, “If there is no signal in non-local communication, if everything is instantly communicating, there is no distinction---this is the oneness/unity that mystics and spirituality have talked about.” (Goswami, n.d., Video 13 7:29)

Profoundly, the concepts of entanglement, non-locality, and discontinuity—individually and collectively—imply unity. “In a quantum universe all of existence consists of a frenzy of subatomic energetic activity which can be characterized as possessing pure potentiality, and all of which are linked and entangled as a basic oneness which extends in all directions and encompasses all dimensions including time.” (Joseph, 2015, *The Quantum Continuum: Being and Non-Being* Section Para. 10) “Entanglement can occur between any objects, of any size, that interact by any means...In principle, this means that virtually everything on Earth (and beyond) has interacted to some degree, and is therefore entangled.” (Radin & Benton, 2005, p. 5-6) Everything we can see, and everything we cannot, is inextricably entangled, including all living beings. This connection is observed through consciousness, or awareness of it.

In quantum mechanics, consciousness is energy and the one Source of all that manifests. It is the enduring foundational electromagnetic field present everywhere, and the foundation of all creation. Awareness, more specifically self-awareness, or being aware of being aware, is the purest and truest form of consciousness. Because consciousness is energy, it can collapse wave functions, transforming energy into reality from potentiality. “Consciousness...is the ground of all being, the ground of both matter and mind. When consciousness converts these possibilities in a collapse event of actual experience, some of the possibilities are collapsed as physical and some as mental.” (Goswami, 2004, p. 29) We see and create what we become conscious of—in

quantum physics this is referred to as downward causation. Consciousness in the purest sense, has also been referred to as God/Anu/Divine Consciousness/Source Energy. This conscious electromagnetic singularity is fundamental. It is “the continuum that constitutes the basic oneness and unity of all things.” (Joseph, 2015, Quantum Consciousness vs Einstein Section Para. 6) “The universe is God (Pure Consciousness) since all things come from God (Pure Consciousness). Every galaxy, stars, planet, human, dog, cat molecule, atom---all come from God (Pure Consciousness) and in the beginning were one with God—this singularity. And in the end, all will return to God (Pure Consciousness), becoming one with God (Pure Consciousness). SO in the end, is, as the beginning: A oneness from which all existence emanates and returns.” (Joseph, 2015, Atomists vs. Creationists Section Para. 15) Whether God/Anu/Divine Consciousness/Source Energy was conscious before, during, or after creation of the universe, is secondary to the quantum physics principle that everything, including God/Anu/Divine Consciousness/Source Energy is vibrational, electromagnetic energy. “It is said that God created humans [and animals] in the divine image. As each soul was created in that first moment God separated into smaller beings of light which were energetic representations of the original vast beingness.” (Gerber, 2001, p. 483) Because everything, including humans and horses and dogs are vibrational Source Energy, we are adhered by a conscious, communal glue.

Quantum Medicine

The U.S. healthcare system continues to honor the reductionist, mechanistic view of physical and mental functioning. Its weaponry towards illness or disease is impersonal symptom-based pharmacologic intervention that is often severe and harmful, or the application

of invasive surgeries that present additional, serious risks. When only symptoms are treated, the cause of illness or disease remains unfettered. Western medicine pays little attention to causality, certainly less to the electromagnetic whole of the HES. This linear, Newtonian system of medicine has failed because the human body is much more than dull, mechanistic structural hardware. “Pharmacologic and surgical approaches are incomplete because they ignore the vital forces which animate and breathe life into the bio-machinery of living systems.” (Gerber, 2001, p. 43) Fundamentally, Newtonian medicine is unable to contend with the unpredictable behavior and adaptation of living beings, thoughts, emotions, or consciousness, and the interconnected energy pathways that make up the physical form. Hospitals and clinics have no space for new patients, and mortality rates due to illness and disease are steadily on the rise. (Murphy, Xu, Kochanek, & Arias, 2018) “Modern medicine is in crisis. Somewhere along the way it lost its soul as its roots grew into a materialistic foundation that acknowledges only an infinitesimal part of reality.” (Drouin, 2014, p. 149) Where Western medicine addresses the physical, Eastern medicine takes into account the non-physical. Integrative Medicine has attempted to blend both Eastern and Western medical traditions in order to treat the individual as a cohesive energetic being. According to the National Institute of Health, Integrative Medicine “brings conventional and complementary approaches together in a coordinated way. It emphasizes a holistic, patient-focused approach to health care and wellness—often including mental, emotional, functional, spiritual, social, and community aspects—and treating the whole person rather than, for example, one organ system. It aims for well-coordinated care between different providers and institutions.” (“Integrative Medicine,” 2018, para. 7) While this is a step forward in the right direction, acceptance of integrative medicine is nonetheless limited, because allopathic medicine views “are still deeply entrenched within a Newtonian worldview which is hundreds of years old.”

(Gerber, 2001, p. 42) “We are using an outdated model of science that can only support Western modalities of healing, the costs of which are exorbitant and unsustainable.” (Drouin, 2014, p. 25)

Quantum medicine is a new way of approaching health and medicine. It builds on the Eastern traditions of incorporating the non-physical, but extends further with the inclusion of quantum physics, which “teaches us there is no difference between energy and matter.” (Ross, 2019, p. 2) Ironically, recent comprehension of the interconnectedness of light, consciousness, and subtle energies have us returning to the wisdom of the ancients, who, through meditation and metaphysical contemplation, intuited the unity of structure between living beings and the electromagnetic universe. (Gerber, 2001, p. 416) “Electromagnetism is at the heart of energetic medicine because the human system, at its most basic level, operates according to the laws of quantum physics and energetics.” (Nelson, n.d., IQ-401: class test notes) Quantum medicine is a comprehensive philosophy that incorporates the macro-physical form, or physical body from classical physics; the small, subtle electromagnetic potentialities, or vital body, from quantum physics; and consciousness, or the mental, supramental & bliss bodies, from mind/spirit. Moreover, and critically, it integrates the use of creativity, which is an “entry point for possibilities, and an entry point for Consciousness.” (Thinking Allowed Productions [TAP], 2010) “Creativity consists of discontinuous leaps in the context of thinking itself. This is the fundamental creativity and consists of discovery because we are here discovering the fundamental laws of movement of the different worlds---already present in the compartment of consciousness called supramental intellect.” (Goswami, 2004, p. 39) Quantum leaps are virtually instantaneous ‘aha’ moments from one lower level of consciousness to another higher level. They result from intuitive insights and foster creativity that goes beyond the mind, beyond

conditioning, allowing the invocation of new vital designs for new vital functions. Quantum medicine was born out of necessity because of the failed allopathic paradigm that excluded consciousness, subtle energies, and creativity. “Creativity is the basis of the quantum healing process. Anyone can use creativity to deal with the epidemic proportions of chronic disease that is a huge problem for those in middle age and the elderly.” (Goswami, 2015, Video12: 50:17)

To affect changes in health, consideration of the entirety of a living being is paramount. “We are realizing more and more that the human body is a homogenous and harmonious whole, and that we cannot injure one part of it without damaging other parts and often the entire organism.” (Lindlahr, 1919, p. 126) Quantum medicine offers a new psychophysiological paradigm for approaching the whole, multidimensional human, from a downward causation perspective. It endeavors to respect and address all interactive planes within the HES, specific to each individual.

Chapter 3: Energy Transmission

Potential Mechanisms of Action for Energy Donation

While this study will not address the specifics of *how* energy is donated or transferred between differing species, it does look at the possible vehicles for that transmission, further substantiating the elemental kinship for *why* it can occur. According to the mechanistic view of conventional medicine, it was presumed that any living body was its own separate entity, operating within a distinct, finite framework, utilizing specific chemical processes for energy (i.e., the consumption of food, photosynthesis, etc.). Advancing ideologies in quantum physics

have facilitated the understanding that all beings are actually innately interconnected; therefore, energy transmission between separate beings is quite possible, and can be utilized to alleviate pain, energy blockages, or illness within all human dimensions. Energy transmission/donation can occur through various channels, including light, touch and the cardiac field.

According to Charles L. Sanders, retired professor of Nuclear Engineering and Radiobiology, “Light is the most efficient and fastest mediator of information in the world.” (Sanders, 2014, p. 517) It is currently believed that cells store biophoton light for communication with other cells and organs within the body in order to regulate energetic force and functions within said body. (“Biophotons,” n.d.) Electromagnetic biophotons belong to the subtle energy realm, but are detectable and measurable with advanced equipment. (Schwabl & Klima, 2005) Cell-to-cell communication can also be thought of in terms of energy/information transfer that happens, notably, “several orders of magnitude faster than chemical diffusion.” (Ji, 2017, para. 7) That is to say, biophotonic light exhibits quantum properties and allows cells to communicate with each other instantaneously and at long range. Gunther Albrecht-Buehler, a physicist with a strong interest in biology, also found that the cells are able to sense specific infrared wavelengths and to determine the direction of individual sources of light, which means they can detect each other. (Albrecht-Buehler, 2005) Direct evidence of this occurred during the first scientific measurements of light emissions coming from a human, demonstrated by an interrelationship between the right and left hands relating to light, wherein the right hand knew what the left hand did. (McTaggart qtd in Guizzardi, n.d., para. 24) Albrecht’s work, specifically, is exceedingly important, because if cells within one body can sense and communicate through electromagnetic energy/light, according to quantum physics which affirms entanglement and nonlocal communication, cells should then be able to influence other cells not

only within, but also outside of their host body. “Your body is made of light and it is structured to flow light, which means that you can merge with anything that you can see---there is no separation.” (Emery, 2013, p. 2) Electromagnetic light-fields interconnect and overlap, allowing energy and information transfer between beings.

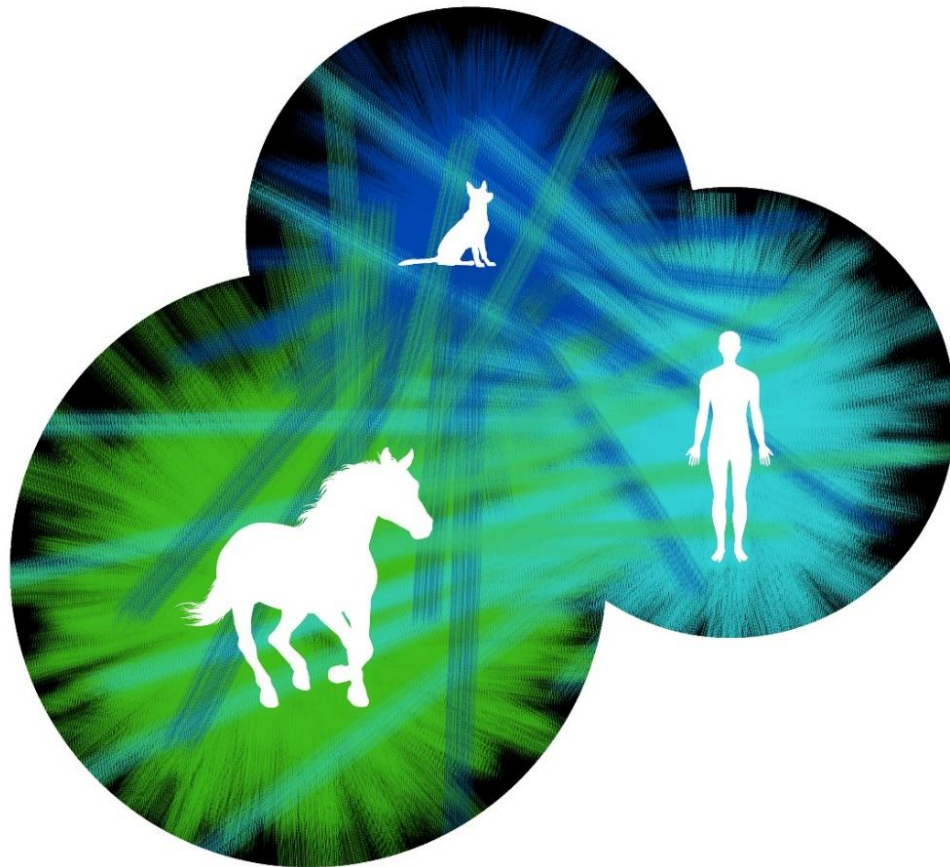


Figure 1. Interconnected electromagnetic energy fields between differing species. © Leslie McBride

Reliable communication requires a sender, a receiver, and a common language that can be understood by both. In the 1990s, Harvard Medical School scientists discovered that human biophotons speak a common language, when they found patterns of syntax and grammar in junk-DNA that are common to all the world’s natural languages. Junk DNA is the largest portion of

DNA, and for years it was believed to be functionless, as it appeared to provide no instructions to the organism, unlike coding DNA. However, the discovery of syntax and grammar amidst the junk indicates that our biophotons can, in fact, communicate. (Keller, 2019, Communications Sec.) Pjotr Garjajev, a Russian scientist, also posits that light communication is not something that happens only inside individual cells or amidst one cell and another; rather, he believes that organisms are able to use light to communicate to other, distinct organisms. Purportedly, Garjajev successfully seized junk DNA communication from a frog and transmitted it to the DNA of a salamander embryo, which later developed into a frog. This feat in energy and information transfer lead Garjajev to believe that ultraviolet energy transmission may be responsible for other forms of alternative communication including extra sensory perception (ESP), telepathy. (Vey, n.d.) Researchers have already reported non-molecular interactions between similar cells. Organisms were chemically isolated from each other, and further separated with sheets of glass or quartz. Two layers of separation were put into place to prevent molecular transfer while allowing for the possibility of biophotonic transfer. Despite separation, interactions between separated populations still occurred and it was therefore concluded that they were most likely biophotonic. (Fels, 2009) Incredibly, further research later demonstrated interactions between three *different* species of microorganisms that were also isolated from each other with barriers that disallowed chemical interference, “The results deliver three observations of non-contact and non-chemically induced physical effects across the species border of two unicellular and one multicellular aquatic organism.” (Fels, 2016, p. 5) These organisms were subsequently tested again, by both blocking them from each other, and from electromagnetic fields. Notably, the interactions disappeared when blocked by EMF shielding. This

groundbreaking work demonstrates that physical communication between differing species is not only possible, but “is of electromagnetic nature.” (Fels, 2016, p. 5)

Touch is a powerful form of communication for many living beings. This includes both physical stimulation and emotional expression. Touch will be discussed at length in the literature review chapter, but it is important to note here that when one energetic being touches another, significant amounts of light, energy, and information are being exchanged during contact. This occurs because waves of electromagnetic quantum objects overlap. (W., 2012)

Aside from touch, living beings can also transmit and receive energy through the heart. The heart does much more than pump blood; it generates the largest electromagnetic field in the human body. “The heart’s electrical field is about 60 times greater in amplitude than the electrical activity generated by the brain. This field, measured in the form of an electrocardiogram (ECG), can be detected anywhere on the surface of the body. Furthermore, the magnetic field produced by the heart is more than 100 times greater in strength than the field generated by the brain and can be detected up to three feet away from the body, in all directions, using (Superconducting Quantum Interference Device) SQUID-based magnetometers.” (McCraty, 2015, p. 36) Much to the chagrin of Western scientists, who’ve deemed the brain as the most important, singular processor of all human functions, researchers are now learning that the heart transmits more information to the brain than the brain sends to the heart. New evidence reveals that the heart has a brain of its own, which allows it to learn, remember and make functional decisions, freely and separately from the brain. (McCraty, 2015) Previously, it was thought that the brain was responsible for all functions within the body, including psychological processing. However, we now see that the brain actually obtains information from the heart which affects the higher brain functions including perception, cognition and processing of

emotions. (McCraty, 2015) Besides pumping life-blood throughout the body, the heart appears to provide “a global synchronizing signal for the entire body...as pulsing waves of energy radiate out from the heart, they interact with organs and other structures.” (Simoneaux, n.d., para. 6) The magnetic field generated by the pumping action of the heart is so great, that it has the ability to affect others nearby, “these same rhythmic patterns also can transmit emotional information via the electromagnetic field into the environment, which can be detected by others and processed in the same manner as internally generated signals.” (McCraty, 2015, p. 37) This energetic communication, or information transfer, occurring within the quantum field, transcends the limits of time and space, as it is electromagnetic and instantaneous, “The heart is directly coupled to an ambient subtle energetic field of information that surrounds the body, which, in turn, is entangled and interacts with the multiplicity of energy fields in which the body is embedded, presumably including fields present within the quantum vacuum.” (Oschman & Oschman, 2015, p. 2) If energetic communication and energy transfer are possible between living organisms from a singular species, yet all species are comprised of the same electromagnetic elements and biophotons; then it stands to reason that energy communication and transfer can occur between differing species.

Animals have such large energy fields that they far surpass the size of human fields, “A dog's energy field is approximately 10 times that of a human. A horse's field will encompass a large arena, and a cat's will fill an entire property. (Wagner, 2010, para. 1) Animals, like humans, also have extensive cardiac energetic fields laden with subtle energy that can be transferred to others.

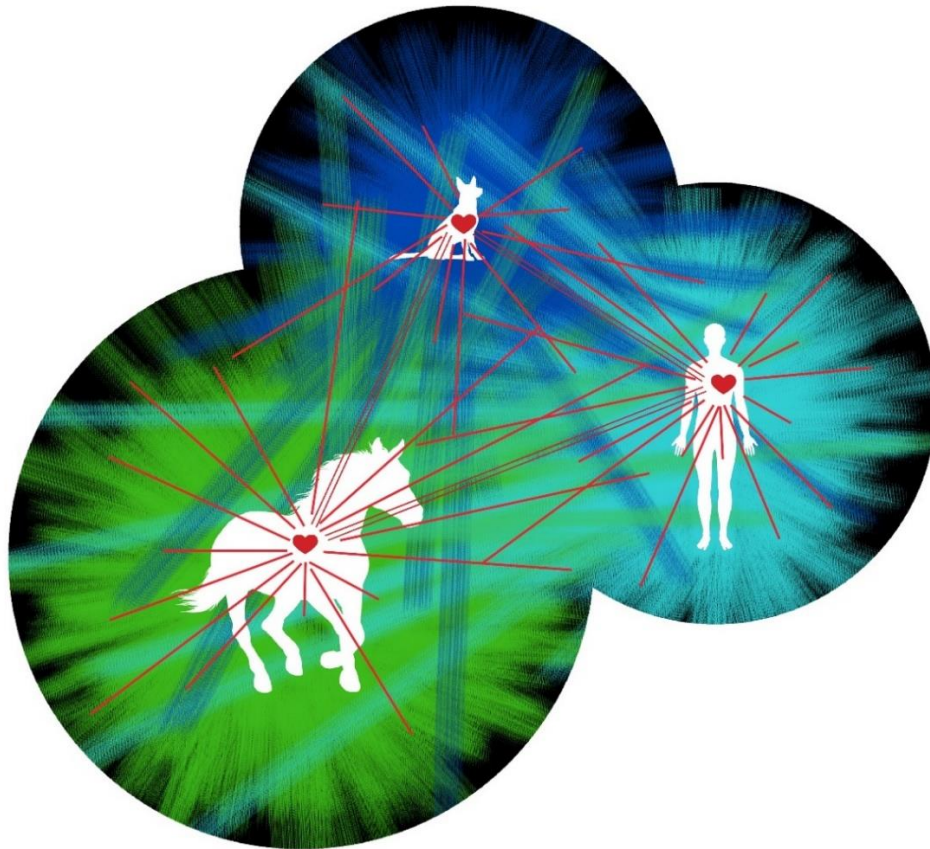


Figure 2. Connected cardiac fields.

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Connection through the cardiac field is so considerable, that it can result in interpersonal synchronicity. This phenomenon involves the physiologic synchronization of heartbeats, respiration, gait, and even skin conductance between individuals. (Baer, 2017) This powerful synchronization happens without conscious intention, and can occur between differing species. Studies have shown that dogs synchronize with their human owners behaviorally, hormonally, specifically with cortisol and oxytocin, and through cardiac fields. (Duranton, Bedossa, & Gaunet, 2017; ; Nagasawa et al., 2015; Sundman et al., 2019) In order to illustrate interspecific synchrony within the cardiac field, the Heartmath Institute performed an experiment involving a

15-year-old boy and his dog, who were both wired with electrocardiogram devices. They were measured alone, together, then alone again.

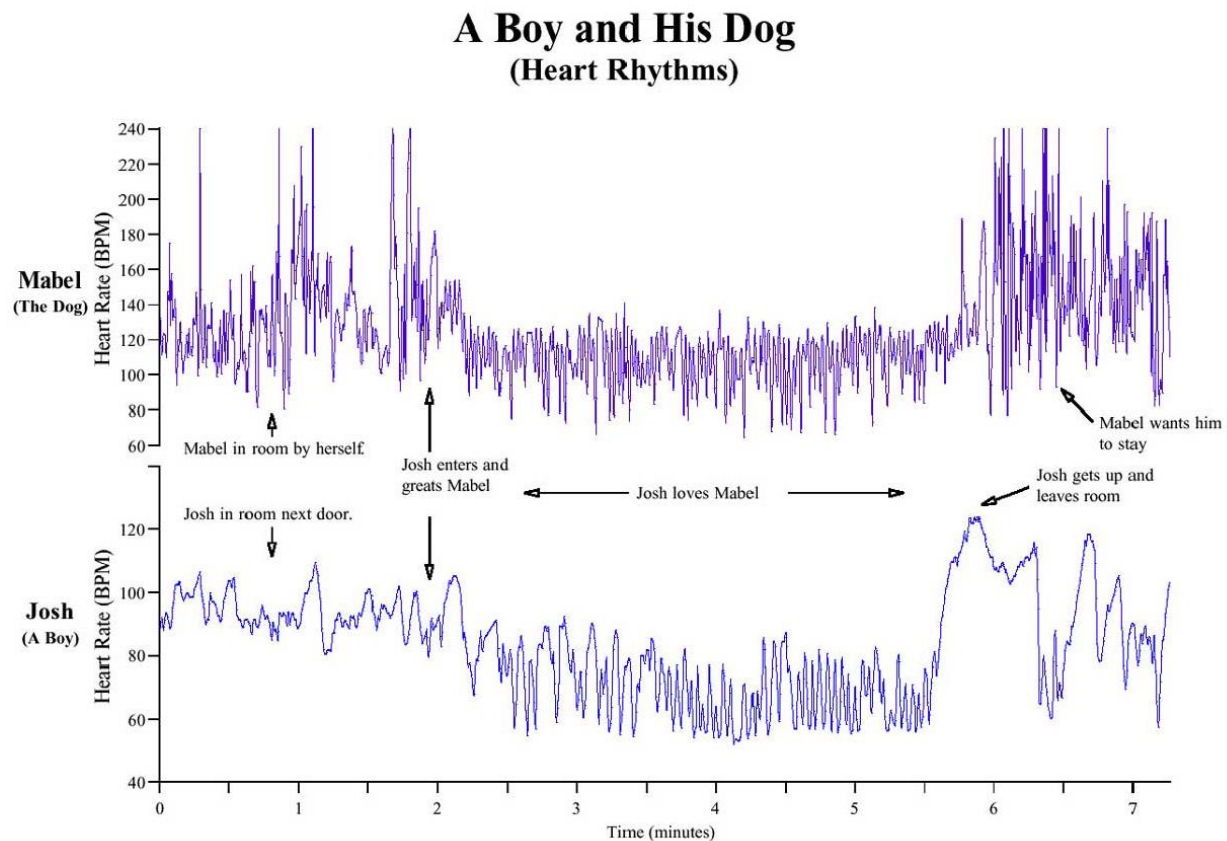


Figure 3. Heart coherence between a boy and his dog. Reprinted from (McCraty, 2015, p. 44) Used with permission.

While together, their heart rhythms unified, or became cohesive. Coherence occurred while practicing a technique called Heart Lock-In, which includes imagining breathing through the heart while experiencing and radiating gratitude. ("Love Intelligence," 2016) Animals exist, naturally, in a state of gratitude; as a result, their heartbeats are quick to unify with humans they are engaged with. The following example demonstrates how quickly harmony occurs between horse and human:

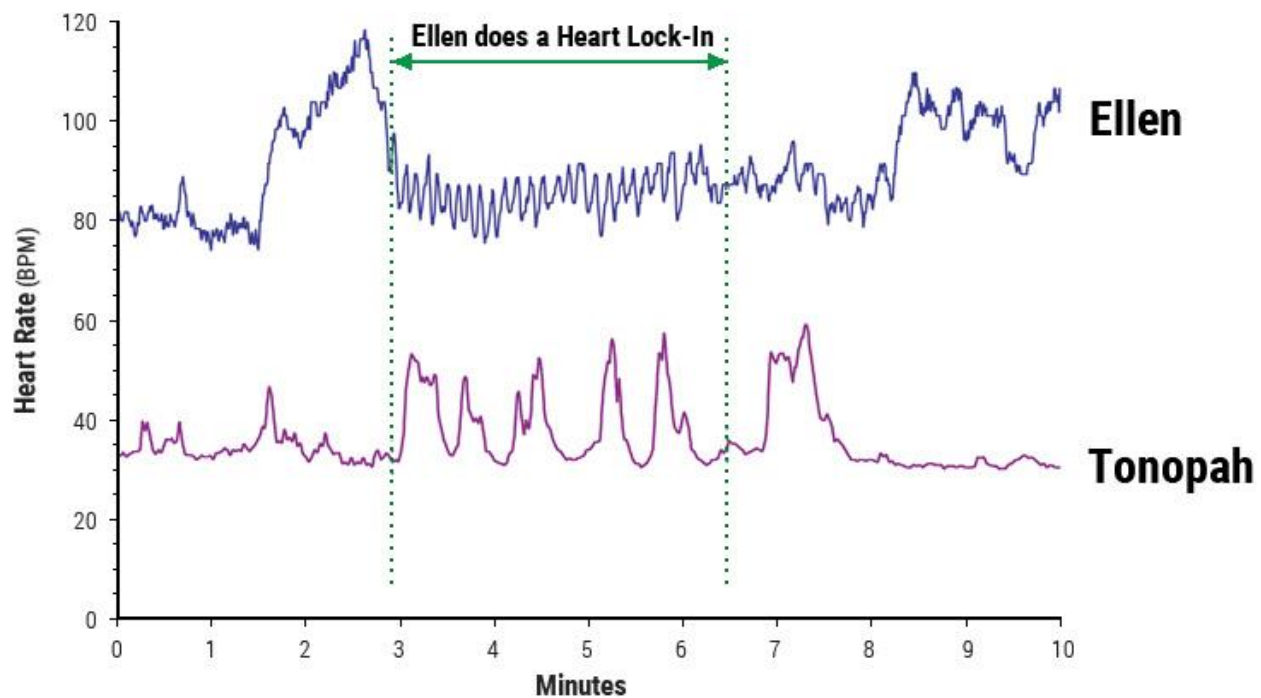


Figure 4. Woman and horse experiencing heart energy connection expressed as coherence. (McCraty, 2015, p. 44) Used with permission.

These examples of heart coherence are further testimony to the energetic connection shared by all living beings. “It appears that there is a type of communication occurring between people above and beyond body language or verbal communication.” (“Love Intelligence,” 2016) Origination and composition commonalities like particles, atoms, molecules, cells, electromagnetic and subtle energies descending from Source Energy, allow us, in accordance with the laws of quantum physics, to speculate that all species can exchange energy. Whether the energy transmission/transfer occurs through biophoton/light signaling, touch, the heart field, or a combination, “energetic communication between individuals may play a role in therapeutic interactions between clinicians and patients [and animals] that has the potential to promote the healing process.” (McCraty, 2015, p. 39)

Chapter 4: Measuring Subtle Energies

Detection and Measurement

Subtle energies are the non-physical vibrational forces that enliven us. “They have been described as electromagnetic wavelengths, rates of vibration, patterns of pulsation---the dynamic infrastructure of the body.” (Donna Eden qtd in "Subtle Energy," n.d., para. 1) Subtle energies are referred to as subtle for good reason: they present challenges in detection and measurement. However, for thousands of years humans have been able to detect these subtle energies, and whole-medical-systems practices like TCM, Ayurveda, Native American and African traditional healing, have been based upon their existence. In more recent times, quantum physics, which propagates the notion that all matter is energy, has broadened the acceptance that subtle energies absolutely exist; thus, the desire to perceive them has also expanded. Veritable subtle energies are detectable and measurable. These include sound, lasers, visible light, and magnetism. Veritable subtle energy devices that are utilized in mainstream medicine “function through well-understood mechanisms and are already widely used in clinical settings: for example, electroencephalography (EEG), electrocardiography (ECG), and heart rate variability (HRV).” (Muehsam, Chevalier, Barsotti, & Gurfein, 2015, p. 43) Putative subtle energies are less perceptible and are therefore deemed difficult to measure with standardized technology. This is particularly true in the United States, where conventional science has been perpetually slow to accept tools or modalities that stray from linear, reductionistic processes. Other countries have successfully conceived and implemented subtle therapy devices that measure and/or employ subtle energies. Some of these biofield tools function through means that are novel, unfamiliar,

or simply not yet well-understood; “However, all of these devices share a common property: rather than functioning primarily in a reductionist, chemistry-centered manner, biofield devices function via the informational content of biological processes and can interact via low-energy, or “subtle” processes, including those potentially related to consciousness and non-locality.” (Muehsam et al., 2015, p. 43) Devices currently delivering meaningful results “suggest a biophysical basis for biofield coordination of activities across the molecular, cellular, and organismic levels and may provide testable hypotheses regarding biofield regulation of homeodynamics and mind-body interactions.” (Muehsam et al., 2015, p. 47) Many of these devices have gained acceptance and achieved regulatory approval for use in clinical and medical settings throughout the world. “Further study of these [biofield] modalities for where there is strong experimental evidence—e.g., BE (biophoton emission), consciousness and nonlocal interactions, GDV, TCM---may substantially advance our understanding of biofield interactions and their biological health implications.” (Muehsam et al., 2015, p. 47) Detection and measurement of these subtle yet vigorous energetic interactions enables quantum medicine to transcend the reductionistic viewpoint characteristic of allopathic medicine, facilitating a new, progressive paradigm in health and healing that is personalized, holistic, and energetically comprehensive.

Bio-Well

Advances in knowledge regarding biofield properties have led to the development of various devices capable of measuring subtle energy processes. Used appropriately, these devices can detect “deviations from the normal functional state.” (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011, Abstract) Further, they can measure incoming energetic influences and reveal their effects on the HES. While several such devices are currently available to health

professionals, this section will address the capabilities of one, specific gas discharge visualization (GDV) device, the Bio-Well. The efficacy of gas discharge visualization as a broad, biometric health care tool will be addressed in the literature review chapter.

In 1995, Russian researchers developed the Bio-Well GDV device, based on the Kirlian Effect, which dates back to the 1930's. Revolutionary for its time, Kirlian photography captured the coronal glow, or "the visible electro-photonic glow of an object in response to pulsed electrical field excitation." ("Kirlian Effect," n.d., para. 5) The contemporary Bio-Well GDV is much more advanced, and was constructed to capture and facilitate monitoring of the dynamic, variable energy fields surrounding and contained by the human body, in order to obtain "a truly holistic view of the state of one's being." (Korotkov, 2014, p. 32) The Bio-Well GDV is not a diagnostic tool, rather it provides real-time visual impressions and information on changes of and within the human energy field. It assists a trained practitioner in: 1) interpreting the current psychophysiological state; 2) monitoring changes of that state; 3) determining appropriate methods for improving or restoring the flow of vital force energy. Therefore, the Bio-Well affords practitioners the ability to assess states of health both prior to and after therapeutic interventions including surgery, energy healing modalities, homeopathic remedies, body work, etc. Highly sensitive, the Bio-Well's accuracy lies in its ability to detect, non-invasively, any changes in energy flow within the body. It possesses an efficacy rate of 80+%, which is considered "very good" even amidst more traditional allopathic medical devices. (Korotkov, 2017) Baseline criterion to determine average levels of homeostasis/healthful energy flow was established by scanning 8,500 healthy male and female individuals aged 25 to 100 years. The baseline parameters were further tested and verified at a later date, by scanning 5,303 patients with known health issues against 1,000 healthy patients. It was concluded that the Bio-Well

system is “convenient, easy to use, facilitates the observation and study of various pathologies, is able to assess the effectiveness of treatment procedures, and allows for quick evaluation of emotional and physical conditions of people.” (Korotkov, 2017, p. 180) With over 200,000 scans currently in the cloud-based software, each new scan is compared to previous scans to estimate the psychophysiological state of the client, with compelling certitude. “Unlike a traditional medical diagnostic device such as a CT-scan or an MRI which provides information on the subject, Bio-Well provides a statistical response to the question, compared to a database of tens of thousands of subjects, [regarding] the physiological and psycho-emotional state of the subject at a high confidence level.” (Deshpande, Korotkov, & Kowall, 2016, p. 2)

The Bio-Well GDV electrophotonic imaging (EPI) device “utilizes a weak, completely painless electrical current applied to the fingertips for less than one millisecond. The body’s response to the stimulus is the formation of an ‘electron cloud’ which emits light energy photons.” (Korotkov, 2014, p. 30) As a charged couple device, it converts the photon emission glow into meaningful digital information. “The light from electrical coronal discharge patterns are measured at each of the ten fingers, which act as electrical termination points for the 12 main meridians of the body.” (Roberts, Shealy, & Tiller, 2004, p. 32) All energy channels within the body are interconnected and can be accessed through the fingertips which are veraciously correlated to the meridians within TCM. TCM meridians are connected to all organs and systems within the body, providing detailed data on psychophysiological states. Many systems of medicine from around the world support the notion that “the fingers and toes reflect information about the physiological state of various organs and systems of the body.” (Korotkov, 2014, p. 147) Fingertips are “easy to access, clean, have a highest density of blood vessels, and the highest density of sweat glands.” (Barsotti, 2019, p. 66) Using the fingers allows for precise

glow, or cloud capture, that is then converted into a digital file that contains “55 distinct parametric discriminates,” and translates to a unique “photonic profile” for each client. (Korotkov, 2014, p. 30) Leading-edge software creates instant two-dimensional graphic representations that are founded upon linked “fractal, matrix and various algorithmic techniques.” (Korotkov, 2014) The resulting images are understandable, meaningful and can be used for analysis, discussion and research. Classified as a wellness device in the United States, the Bio-Well GDV has achieved official medical certification in Russia, where it is commonly utilized in hospitals and other clinical settings. Bio-Well GDV EPI has a high level of reproducibility. In 2001, a quantitative analysis showed that the EPI repeatability factor was greater than 90% among healthy people. (Russo et al., 2001) Western medical standards indicate that reproducibility should be within 95% range with a margin of error $\pm 5\%$. The Bio-Well falls within this range; it therefore “shows a high level of reliability.” (Korotkov, 2017, p. 180)

The Bio-Well is able to “identify changes in the [physiologic] human energy system as it relates to general stress.” (Barsotti, 2019, p. 52) Both external and internal influences activate the autonomic nervous system (ANS), which is responsible for the involuntary, visceral functions in living beings. Reactions are then governed by either the sympathetic (SNS) and parasympathetic (PNS) nervous system. The skin, a human’s largest organ, reveals these PNS- and SNS-induced reactions through changes in “electrical resistance, capillaries can narrow and widen, organic molecules are emitted through skin pores, and the charges of electron transfer in the connective tissues also changes.” (Korotkov, 2014, p. 46) Further, because thoughts and actions are also accompanied by electrical activity in the nervous system, the Bio-Well is able to measure subconscious and emotional processes as well, due to the fact that the psychological

cannot be separated from the physiological within the unified system of the biofield. “Every change that occurs in a physiological state is accompanied by a change in the mental and emotional state, conscious or unconscious, and conversely, every change in the mental-emotional state is accompanied by an appropriate change in the physiological state.” (Green, Green, & Walters, 1999, p. 20)

Because the Bio-Well is able to accurately, reliably, and repeatedly detect very small changes in the HES, it can be utilized to identify and monitor acute and chronic issues that have already presented within the physical form; moreover, and possibly more importantly, it can be used predictively to catch blockages within the higher, unseen levels of HES before they lead to illness or disease. Once energy disturbances have been detected, the Bio-Well can function as means to measure and monitor energetic interventions, such as energy donation through direct touch, and how it affects vitality, stress, chakra activation and alignment, energy reserves, ANS balance, and immunity. “The bioelectrography approach makes it possible to put into practice one of the most important ultimate aims of scientific and practical military medicine: to make a prognosis of the result of the body’s response to a stimulus with the aim of diagnosing functional reserves, preventing unjustified or damaging effects, selecting individual doses of restorative treatment, creating an objective basis for drawing diagnostic conclusions.” (Korotkov, 2014, p. 67)

Even conventional science has begun to acknowledge that our organ systems are deeply connected to one another, and these connections directly link to our thoughts, emotions, and stress levels, unequivocally impacting our health and well-being. Health, according to the World Health Organization, is “a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.” (“Health Definition,” n.d., para. 1) Complete well-

being, which is a state of comfort or happiness, depends wholly on energy flow within the entirety of the HES, and is highly dependent on flow within and between cells. When there is a blockage or irregularity within the energy flow, maladaptation can occur, and well-being suffers. “All disease is caused by something that interferes with, diminishes, or disturbs the normal inflow and distribution of vital energy throughout the system.” (Lindlahr, 1919, p. 370) Energy disturbances occur first within the subtle bodies of the biofield, “... research suggests that illness begins first in the etheric and higher frequency vehicles. If this is so, then signs of illness can be seen in the etheric body (biofield) earlier than they can be detected in the physical body.” (Gerber, 2001, p. 204) Because the external body takes time to exhibit signs of maladaptation, illness or disease, as it fights an energy blockage or establishes a new, lower functioning, lower vitality baseline of vibration, the Bio-Well can be used proactively as it successfully provides detailed information, in real-time, regarding the psychophysiological state of a person. Organ pathology can quickly present if vital energy flow is impeded long-term, “People die of acute disease because their vitality may be too low.” (Lindlahr, 1919) Vitality is light: i.e., when a lightbulb is failing, it can no longer shine brightly or effectively. The Bio-Well is able to detect even minor disturbances in differing levels of the HES, allowing deficient areas of energy to be addressed in a timelier manner, in order to preserve or restore health.

Numerous methods, both well-established and newly emerging, exist for assisting or reestablishing vital energy flow, including acupuncture, Ayurveda, sound therapy, as well as energy-based modalities including microcurrent and lasers. One modality that has received little consideration is inter-species energy donation through direct, steady touch. The Bio-Well allows for real-time measurement of this phenomenon. “Bio-Well imaging provides a convenient means for observing the dynamics of an individual’s changing state during his/her life or under the

influence of a therapy.” (Korotkov, 2017, p. 26) Monitoring chakras and meridional pathways, organs and physiologic systems, opens the field of quantum healing by allowing practitioners to intervene much earlier, before symptoms manifest into illness or disease.

Chapter 5: Literature Review

Literature of Interest

Scientific research has shown repeatedly that animals are remarkable partners in therapeutic settings, and that their vital energy enhances quality of life among human counterparts. It is proven that when humans pet, stroke, or groom an animal, specific physiologic changes occur, including decreased heart rate, increased oxytocin and serotonin secretions, and decreased blood pressure. (Handlin et al., 2011; Barker, Knisely, McCain, & Best, 2005; Stafferton, 2019) Yet empirical data is missing regarding how the human biofield responds to the effects of direct, steady touch with animals; in this case, dogs and horses. Historical anecdotal information and new, albeit minimal experimental research emerging from contemporary science, reveal that meridians are energetic pathways for and chakras are portals to the biofield and its subtle energies. Humans and animals share these systems, and both can be accessed and activated by various interventions, including interspecies direct, steady touch. Observation and measurement of the resulting effects of this touch are possible with evolving scientific devices designed to detect energy, as contemporary science is finally beginning to understand that energy is the very foundation of existence. Relevant literature to this study is sorely deficient: thus, as an alternative to citing every published study in any one area, as is typical within the costive Western educational paradigm, the following chapter will cite and discuss notable and thought-provoking literature associated the contextual framework of this project. This includes pathways

for energy transfer, how these pathways can be detected and measured using GDV, stress and its effects on the body, touch as a mechanism for energy donation/transfer, and animals as medicine.

TCM Meridians

TCM, which is over 3,000 years old, has long recognized that “the fingers and toes carry information about the functional state of organs.” (Korotkov, 2014, p. 147) The Bio-Well GDV device use information obtained specifically from TCM meridians located on the fingertips, to access current information regarding psychophysiological functioning in the human body. The entire basis of TCM is founded upon meridional theory, which predicates that there are numerous channels within the body where vital energy flows, and it emphasizes the need for balanced energy flow within all pathways. These channels run vertically, horizontally, and cross repeatedly, with the fundamental meridians beginning and ending in the fingers and toes.

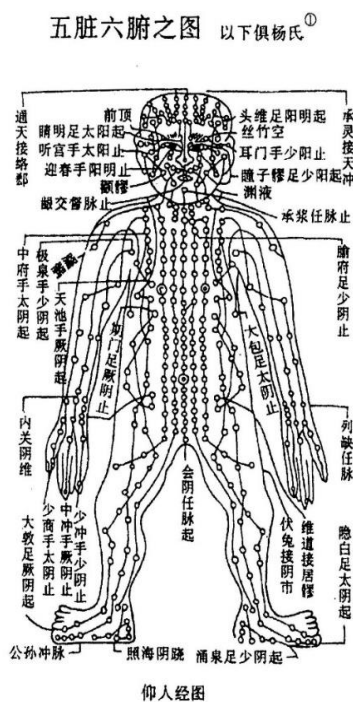


Figure 5. Meridians in the human body. Retrieved from public domain: <https://meadowsweet-sage.tumblr.com/post/23129004447>.

The existence of meridians has been questioned, extensively, by conventional medicine, and numerous researchers have attempted to physically locate these energy channels. In 1963, Korean doctor Kim Bong-Han discovered Bong-Han corpuscles in rabbits. These corpuscles are nodes and ducts within the primo vascular system (PVS) that act as meridians, according to Dr. Bong-Han. “The PVS is a previously unknown system that integrates the features of the cardiovascular, nervous, immune, and hormonal systems.” (Stefanov et al., 2013, Abstract) Dr. Bong-Han’s work was scrutinized because he did not reveal his histological technique and his study could not be duplicated. (Longhurst, 2010) However, new teams of Korean researchers have recently resurrected this study and do believe that “the primo-vascular system is in fact the physical component of the Acupuncture Meridian System.” (ReShel, 2016, Scientific Research Para 3) Acupuncture points lie only on meridians, and are absent in non-meridional locations. The researchers used special staining dyes that were injected into both acupuncture and non-acupuncture points. The dyes only showed up on the acupuncture points, concluding that meridians do exist within specific areas of the body.

The Korean researchers further hypothesize that the PVS, as a component of the meridian system, “is involved in channeling the flow of energy and information relayed by biophotons.” (ReShel, 2016, Scientific Research Para 3) This correlates with the beliefs of Dietrich Klinghardt that “acupuncture points are specialized light emitting, and receiving transmitters.” (Klinghardt, 2019, Light and the Human Biofield) Skin resistance is also a popular theory with regard to the location of meridians according to a study in 1976. Sensitive instruments are used to find and measure skin with lower resistance than surrounding areas, with the results indicating that these low resistance areas are the locations of acupoints/meridians. (Becker, Reichmanis, Marino, & Spadaro, 1976) Other studies have focused on lines of high conductance using the Ryodoraku

machine. (Chan, 1984) Further studies using a Voll machine, have focused on a higher steady state capacitance resistance of the skin. (Pomeranz & Berman, 2003) The inconsistency among these studies may indicate that, much like the biofield, there is no physical basis for meridians. (Longhurst, 2010) Mike Emery, a well-published quantum physicist, posits, “What are these channels exactly? The answer is obvious: it is the aethers [*sic*]---more precisely, the gaps in the aethers [*sic*]. Those gaps are the operative bits of a super conductor.” (Emery, 2011, p. 4) These gaps, although subtle, allow Chi, or light, in the form of photons, to flow through these meridional channels.

Modern researchers may be missing the point in trying to provide visual or concrete evidence of meridians from a system of medicine that has been in existence and proven effective for thousands of years. Feelings exist, but we cannot see them. The wind exists, but we can only see the effects of it. Source Energy exists, but we have yet to see a visual representation of It. Yet, most believe, blindly, in these concepts; and, proof exists in the form of detectable, measurable changes to matter under influence of any one of these invisible forces, for example a tree bending in the wind. If scientific researchers spent less time trying to demonstrate the existence of meridians, and more time working from belief/faith that they exist, whether or not they are visually demonstrable, they could make strides in fixing our broken healthcare system, moving from “practitioners to healers.” (Gerber, 2001, p. 418) “It will be through the exploration of the physical-etheric interface (biofield), as provided by measurements of the acupuncture meridian system, that medicine will slowly evolve toward a more subtle energetic orientation of diagnosis and treatment.” (Gerber, 2001, p. 200)

The meridian system is highly sensitive and reactive to forms of stimulation and energy influx. Further, it appears to be inherently regulatory, in that it sends and balances energies

where needed. In 2013, Asian researchers applied photoluminescent bioceramic material (PLB) to subjects, in an effort to stimulate meridians through acupuncture points that were demonstrating abnormal energy flow, as detected by a MEAD Me-Pro device. The PLB was applied to points of abnormally high or low current and then stimulated with a light source. “The PLB irradiation significantly regulated the meridian points and tended to normalize the current flow of abnormal meridians approaching their normal level.” (Chen et al., 2013, p. 4) Their results also revealed a reciprocal phenomenon wherein influence from one meridian stimulated another meridian; thus, the PLB treatment showing a “tendency to provoke inter-meridian interaction.” (Chen et al., 2013, p. 5) Noteworthy, this demonstrates the interconnection, sensitivity and self-balancing properties of the meridian system when stimulated by an outside influence.

Chakras/Energy Centers

In the ancient system of Ayurveda, the subtle energy bodies which exist as part of the physical body are referred to as chakras. They organize and coordinate the higher vibrational energies surrounding, entering, and emanating from the physical form. The chakra system is typically divided into seven major energy centers, running from the base of the spine to the top of the head. These unique centers are circular in shape and spin with electromagnetic energy and light. “The lines of force forming the centers are made up of refined particles of light energy that travel in an organized manner, inscribing patterns of light, to simplify the concept, that flow in the shape of flower petals.” (“Our Magnetic Energy System,” n.d., para. 10)

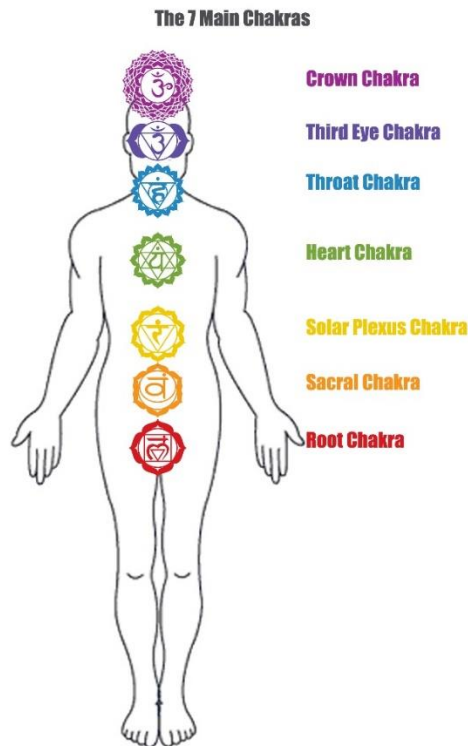


Figure 6. The seven main chakras. Retrieved from public domain: Google Images.

Like meridians, these subtle yet powerful vortices are interconnected and strive to obtain a balanced flow of energy within the body, “Chakras are always yin and yang: what happens in physical reality affects them, and what occurs in a chakra alters physical reality.” (Dale, 2018, p. 17) There is a belief that the chakras work in conjunction with meridians to “regulate the flow of energy throughout the electrical network (meridians) that runs through the physical body.” (Mendoza, n.d., para. 5) While each chakra manages very specific processes within the body, they also regulate the more subtle dimensions of the psychological and spiritual fields, as they provide access to, and can interact with, other higher vibrational energies available to enhance well-being. Specifically, they convert the higher vibrational information to lower levels, allowing it to be assimilated by the body and its cellular structures; thus, they play a very important role in the maintenance of energetic homeostasis. “The chakras translate energy of a

higher dimensional nature into some type of glandular-hormonal output which subsequently affects the entire physical body.” (Gerber, 2001, p. 131)

The chakras are intimately connected to psychological and spiritual well-being; this includes beliefs, learned responses, and how we perceive, react or respond to the world. (Dale, 2018) Biologically, each chakra is associated with a major nerve plexus, and they “are frequently associated with particular anatomical locations and are considered to have direct influence over specific, select aspects of physical and mental functioning.” (Maxwell, 2009, p. 809) Chakras are positionally situated along and directly connected to the ANS, the central nervous system (CNS), and the endocrine system, and “chakras influence physical systems through those associations.” (Chernin, 2002, p. 77) Significant, the endocrine system asserts tremendous influence on the body, from “cellular gene activation on up to the functioning of the CNS.” (Gerber, 2001, p. 369) This includes tissue functioning, metabolism, growth, development, hormones, sexual function, sleep and mood, “... almost every organ and cell in the body, according to the Merck Manual.” (Zimmermann, 2018, para. 2) Psychologically, chakras manage beliefs and feelings related to those beliefs. Spiritually, chakras facilitate growth towards enlightenment by providing access to insight and inherent extrasensory information.

Chakras, much like TCM meridians, are difficult to detect with conventional scientific instruments that are generally geared toward the measurement of biochemical physiology. “Past attempts at identifying a physical corollary to the subjectively experienced chakras have been unsatisfactory because knowledge had not yet existed about a physiological system that was sufficiently subtle.” (Maxwell, 2009, p. 818) Contemporary research is now proposing that chakras are multidimensional in their effect on the body, “We can now suggest that chakras affect us through the electrical *and* chemical functions of the nervous system and the nervous

system's kinship with the endocrine glands spreads the influence of chakras throughout the body.” (Dale, 2018, p. 428) Additional studies postulate that chakras are electrical in nature and function through electrical synapses occurring within subtle gap junctions that coordinate intercellular processes. (Shang, 2001) Moreover, it has been discovered that the peptides and receptors that process emotions are grouped at the main chakra points, and these seemingly chemical processes are actually electrochemically charged interactions. (Freedman, 2007) With the understanding that chakras are electrically based, they are measurable with GDV technology due to the fact that they emit electrostatic fields, “The electrostatic fields are only secondary effects produced by the higher octave etheric energies, but they are more easily measurable with conventional electronic recording equipment.” (Gerber, 2001, p. 132)

Modern science has been slow to recognize the need for technology that detects and measures the often-subtle electromagnetic nature of the physical form. Chakras require a reliable, regulated energy flow in order function optimally. Physical, emotional, or spiritual stressors can inhibit or block the chakras, restricting their size/activation, and their alignment. Chakras can also become over-active; for example, if one is over-compensating for another. Healthy functioning chakras are proportionate in size and specific to each person. Under-active chakras impair the balance of the body, and can result in maladaptation or illness. (Sui, n.d., para. 1)

Using appropriate electro-magnetically tailored equipment for detection, we are now able to glean information regarding the etheric chakra system, which then allows for much earlier detection of disturbances because blockages and resulting maladaptation can be seen through changes in size or alignment. Chakras are receptive and aim to provide energies that can be assimilated by the mind/body/spirit. They seek optimal self-balance through biologic resonance

with other accordant frequencies such as those provided by touch, acupuncture, reiki, sound therapy, etc.; and, because they operate from an ethereal plane, they can “step energy up and down from the farthest reaches of heaven to the smallest of atoms.” (Dale, 2018, p. 452)

Stress

Research is now showing a distinct relationship between emotions, stress, immune suppression, and the increased risk for physical and psychiatric disorders. Stress is “the body's reaction to any change that requires an adjustment or response.” (“Stress,” 2015, para. 1) When a healthy person encounters stress, the body often responds quickly and appropriately without generating lasting effects. However, when stress becomes excessive or overwhelming, it begins to negatively affect the body. In 2018, the United Kingdom undertook its largest known study on stress, and a startling 74% of 4,619 residents polled felt so stressed that coping was a struggle. (Thompson, 2019) Long-term health conditions and debt were top causes of stress, which then led to notable increases in eating, drinking alcohol, smoking, depression, anxiety, self-harm, and thoughts of suicide. (“Stress,” 2018) Unfortunately, these inappropriate coping mechanisms typically result in further health consequences with unfavorable outcomes. “Stress is the common risk factor of 75%–90% diseases, including the diseases which cause the foremost morbidity and mortality.” (Liu, Wang, & Jiang, 2017, p. 1) The most common stress-related diseases are cardiovascular diseases, including hypertension and atherosclerosis; metabolic diseases, including diabetes and non-alcoholic fatty liver disease; mental and neurodegenerative disorders such as depression, Alzheimer’s disease, Parkinson’s disease; and cancer. (Liu, Wang, & Jiang, 2017; Cohen, Janicki-Deverts, & Miller, 2007)

Stress is highly detrimental to immune system function, even more so if the body is weakened by disease or age. When faced with stressors, the ANS activates the SNS, which is the system that prepares the body for fight or flight. This occurs through the release of hormones that increase heart rate, dilate blood vessels, stop digestion, send extra blood to the large muscle groups, increase oxygen consumption, and signal alertness. The body uses energy opportunistically, and when stress has triggered fight or flight, the immune system turns off so that available energy can be used to fight or flee. (*Stress & Illness*, 2019) Further, repeated hindrance of immune system function leads to a loss of flexibility and adaptability, which then leaves the body ripe for illness or disease. Not only can the body not heal when the immune system is shut down, it cannot grow new cells for general maintenance. When the immune system is compromised, it is similar to a vehicle having an almost empty gas tank during a long journey: at some point, reserves are depleted, and progressive action comes to a halt. The body is not meant to exist in a continual state of arousal, “It is well established that an increased activity of the sympathetic nervous system (SNS) plays an important role in the pathogenesis of cardiovascular disease (CVD), like essential hypertension, atherosclerosis and age related arterial wall thickening, heart failure, and ventricular arrhythmias.” (Kopp, 2009, Abstract) The SNS regulates many body functions without conscious input. “[One of] the regulatory function[s] of the SNS includes monitoring and influencing immune homeostasis.” (Koopman et al., 2011, p. 939) The immune system then, “modulates the electrical activity of the cardiac conduction tissue.” (Lin, Tona, & Osto, 2019, p. 3)

The immune system is also closely intertwined with the neuroendocrine system, which “serves as an interface between the brain and peripheral endocrine systems, that are then linked back to the chakras. (Gore, 2013, Chapter 38) These systems are highly integrated, and

together, are decidedly vulnerable to the effects of stress. Stress can come from both negative (i.e., losing a job) and positive (i.e., buying a dream house) experiences, but may result in maladaptation with long-term continuation or without reprieve between events. “Research suggests that chronic stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, and causes brain changes that may contribute to anxiety, depression, and addiction. Additional research suggests that chronic stress may also contribute to obesity, both through direct mechanisms (causing people to eat more) or indirectly (decreasing sleep and exercise).” (“Stress Response,” 2011, para. 3) A 2015 study illustrated that chronic stress leads to inflammation which propagates neurodegeneration and has deleterious effects on mental functioning, and leading to an increased risk for dementia-related diseases including Alzheimer’s. (Heppner, Ransohoff, & Becher, 2015) Additionally, sudden stressors such as traffic, an argument, or being late for work, or even participating in a rigorous sporting event can cause acute stress reactions that also impact health. “Acute psychological stressors evoke cardiovascular reactions that unfold rapidly. These reactions result from brain-based changes in ANS visceromotor outflow to the heart and vasculature—typically characterized by increases in sympathetic and decreases in parasympathetic activity.” (Gianaros & Wager, 2015, p. 314) Stress causes changes to the brain, increases risk for stroke, affects sleep, sexual dysfunction, and increases the possibility of depression and anxiety. (“Stress,” 2015)

Counterpart to the SNS, is the PNS, which is considered the “rest and digest” component of the ANS. It allows the body to recover, restore, and rebuild energy by decreasing heart rate and breathing rate, lowering blood pressure, and increasing digestion. These two seemingly opposing divisions of the ANS are actually complementary in nature, rather than antagonistic. (Korotkov, 2017) . Working together, their goal is to “regulate the internal environment so as to

maintain a stable condition...for optimal functioning.” (Korotkov, 2014, p. 93) Issues arise when the SNS/PNS balance is jeopardized. For example, the SNS doesn’t turn off automatically. Once a stressful event has passed, the body may remain in an SNS-induced state and it can be detrimental to health. Reducing stress facilitates better balance between the SNS and PNS, and frees the immune system “to assist the body in repairing itself, which is necessary for the prevention of disease and healing.” (Cotter, 1997, para. 4)

Gas Discharge Visualization (GDV)

To date over 10,000 GDV cases have been described in clinical studies and “nearly 1,000 papers have been published (mostly in Russian) on GDV research, and a few hundred more in the West.” (Muehsam et al., 2015, p. 46) An exhaustive search revealed only two studies regarding the use of GDV with animals, and both included dolphins. In 2010, participants attending a wellness retreat in Maui were measured before and after swimming with wild dolphins. The informal research project was headed by a holistic eyecare physician, with a strong interest in energy medicine and healing. He questioned whether interaction with wild dolphins would affect human energy fields and chakras. 14 participants were given a GDV scan an hour prior to and an hour after interacting with wild dolphins. Unfortunately, the paper’s focus strayed, and the author neglected to include any data or pertinent descriptions from the GDV scans. Problematically, he also introduced three other energy modalities during the retreat (light/color/sound therapy, essential oils, and vision therapy activities), so even if GDV data had been included in the paper, it would be difficult to determine if any detectable changes were influenced solely by the dolphins. (Berne, 2011) In 2013, a separate study in Waikoloa (Big Island, HI) measured four humans before and after swimming with captive dolphins in a lagoon,

and again with separate school of wild dolphins in the ocean. GDV data showed that swimming with dolphins positively affected the four participants. Interaction in the lagoon resulted in decreased stress and increased chakra balance for all four adults. Swimming in the ocean, however, increased stress for two participants, but chakra balance was maintained. (Milroy & Khavkin, 2013)

Despite a complete lack of formal research involving animals and GDV, other stimulating research exists that illuminates the integrity of GDV and its ability to detect subtle energies. Outside influences clearly affect the HES; thoughts, although internal and unseen, also have tremendous effect on the physiology of living beings. A thought may be considered “the highest manifestation of mental activities of man.” (Anufrieva, Anufriev, Starchenko, & Timofeev, n.d., p. 3) Comprised of the same Source Energy as all living beings, thoughts then, or their effects, should be detectable with the same devices that access other levels of the biofield. A study in Russia aimed to visually demonstrate physiologic changes that occurred as a consequence of various thoughts. After a pre-scan with GDV, a group of adult individuals were given instructions to think a loving thought such as, “May all the people be well!” or another generalized loving thought, or a loving thought to someone at a distance. They were then given a second scan using GDV, and the notable effects of the thoughts were captured and illustrated through flares in the heart region of their energy field depicted as an aura. Individuals on the receiving end of loving thoughts were also given before and after GDV scans. The flares, which were significant, registered within two seconds on both thinkers and receivers. Thoughts seemingly originate in the mind, but here, they appeared near the heart sector of the GDV projected aura, which also corresponds to the heart chakra and the cardiac field.

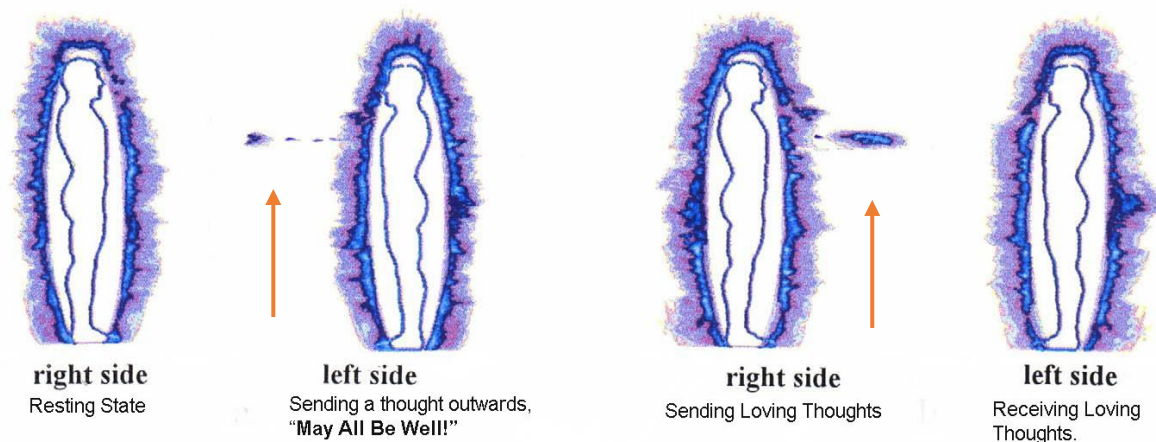


Figure 7. Bio-Well images registering "thoughts" emanating from the heart of the thinker. Sending loving thoughts reveals a distinct energetic emission from the cardiac region. Also, the energy field of the receiver of loving thoughts enlarges, fills in, and illuminates, to exceed that of the resting state. (Anufrieva, Anufriev, Starchenko, & Timofeev, n.d., figure 1) Used with permission.

It is now speculated that these loving admonitions actually originate in the heart, as the heart has the capacity to think on its own, as researchers have determined that thought-process neurons, typical to the brain, actually exist in the right ventricle surface of the heart. (Anufrieva, Anufriev, Starchenko, & Timofeev, n.d.; McCraty, 2015) This GDV study is one of the first to measure the energetic effects of intentional thoughts, in real time, and to illustrate the statistically relevant results. Loving thoughts, as emissions of energy from the cardiac field, modify the physical world and surrounding energies, including those of other living beings.

GDV is capable of detecting and measuring negative influences upon the HES, as well. A recent study sought to measure the effects of mobile phone-induced radio-frequency electromagnetic fields (RF-EMF) on teens' subtle energy levels. It is well-documented that exposure to RF-EMF can be detrimental to health, causing headaches, depression, anxiety, ADD, and cancer. (Bandara & Carpenter, 2018; Kivrak, Yurt, Kaplan, Alkan, & Altun, 2017; Miller et al., 20019) Teens may be more susceptible to the ill effects due to time spent on the phone,

and due to the fact that they generally have a smaller head circumference and increased water content and ion concentration in the brain. (Kheifets, Rapacholi, Saunders, & van Deventer, 2005) 61 right-handed, otherwise healthy teenagers were randomly divided into two groups: cell phones ON at right ear, or cell phones OFF at right ear. The study was double-blinded; neither researchers nor teens were cognizant of who was in the ON or OFF group at the time GDV measurements were taken, which was prior to, and directly after the 15-minute exposure to ON or OFF. Subtle energies were significantly reduced after RF-EMF exposure, specifically quantifiable within the endocrine glands, nervous system, liver, right kidney, spleen, cerebral cortex and cerebral vascular area, and the immune system. (Bhargav et al., 2017) This same researcher undertook a similar study with another group of 30 healthy, right-handed teenagers who were taught the Nadishuddhi pranayama breathing technique as a means to prevent the loss of subtle energies during cell phone use. (Bhargav, Suresh, Hankey, & Bhargav, 2016) The teens were instructed to practice Nadishuddhi during cell phone use, in both ON and OFF modes. Unfortunately, the breathing technique failed to prevent the reduction of subtle energies, as indicated with GDV. As with their previous study, subtle energies decreased significantly with cell phones ON. Although the researchers failed to prove their main theory, the success here, was the reliability of GDV to detect substantial changes in teens' subtle energy levels during cell phone use, not once but twice.

In conventional medicine, GDV has been utilized as a method of detection for colon tumors. 82 individuals with known, existing colon tumors were studied using GDV. The control group consisted of 55 people with no tumors. This formal study revealed that GDV is certainly able to identify patients with tumors, and in some cases provide further information regarding morphology, size and quantity of tumors. (Yakovleva et al., 2015) Colonoscopy, which is

considered the gold-standard of colon screening, boasts a sensitivity rating of 95%, however, this applies to large polyps only. Specificity for colonoscopy depends on the size of the tumors.

(*Colorectal Cancer Screening*, 2007) Colonoscopies are not available to many due to cost and invasiveness, and many people simply will not have one out of fear, dread, or ignorance. The time-efficient (less than 5 minutes), non-invasive, cost-effective, sensitive GDV process revealed a sensitivity rating of 74%-85%, and a specificity rating of 66%-77%. These detection rates are considered significant, and may surpass other home-based tests like FOBT (fecal occult blood test) and FIT (fecal immunochemical test), which report 30% - 90% sensitivity rates. Further research is required, but this initial GDV study is promising, and illustrates GDV's authenticity in detecting changes within the human biofield.

Other studies where GDV has been used successfully include: the effects of needling on acupuncture points (Roberts, Shealy, & Tiller, 2004); energetic imbalances in diabetics (Sharma, Hankey, & Nagendra, 2014) ; the effects osteopathic treatments for stress reduction (Korotkov et al., 2012) ; and to differentiate homeopathic remedies from solvent controls (Bell, Lewis III, Brooks, Lewis, & Schwartz, 2003) Finally, the proficiency of GDV also correlates with self-report measures and EEGs, further verifying reliability and repeatability. (Cioca, Giacomoni, & Rein, 2004; Haun, Patel, Schwartz, & Ritenbaugh, 2015)

Despite high accuracy and reproducibility, Western society is still slow to accept emerging technology like GDV. Measuring and monitoring controversial invisible fields, that have yet to be accepted in their own right, strays from the conventional molecular reductionism belief system inherent within the current academic and clinical science culture. GDV technology shows promise, with a continually growing base of empirical research yielding robust results regarding its ability to detect, measure, and monitor the human biofield. Interest is increasing,

exponentially, in addressing health within a broader holistic paradigm that includes new, leading-edge, interdisciplinary scientists and technologies. “Despite long-lasting taboos proscribing the study of these phenomena, researchers must have the courage and self-awareness to assess the veracity, specific properties, and general significance of the large and important body of work in this area.” (Muehsam, Chevalier, Barsotti, & Gurfein, 2015, p. 47)

Touch

HeartMath Institute undertook a study to demonstrate that humans are able to transfer energy to other humans when they touch: “The study involved wiring pairs of subjects up to electrodes and having them sit five feet apart. The researchers found that one person's heart energy waves (electrocardiogram output) were not detectable by the electrodes on the surface of the other person's body at that distance. However, when they were holding hands, each person's heart energy waves were detectable on the surface of the other's body, and even in the other's brain waves.” (Bruce, n.d., para. 2) Touching, therefore, appears to be a catalyst for detectable energy transfer. (Duranton, Bedossa, & Gaunet, 2017; Sundman et al., 2019) Of the five fundamental senses, touch is the earliest sense to develop, and “the most sophisticated and intimate of the six senses.” (Burgoon, Buller, & Woodall, 1996) Unlike the other senses, which are experienced individually and independently, touch is generally shared and has universally identified and understood meanings. In the late 1960s, researchers divided touch into three broad classifications: reality orienting, support, and physical protection. (Cashar & Dixon, 1967) Each of these classifications is based on communication, or a method of exchange between two or more individuals. The exchange is multifactorial, involving tactile, physiological, emotional, and energetic information. “When we touch...with another, there is a real transfer of energy

between us. We are touched and no doubt penetrated by each other's energy field. All kinds of contact casual, intimate, as well as contact for healing purposes involve a co-mingling of our energy field with that of another.” (Collinge, 1998, Chapter 4) As early as the 1700s, Franz Mesmer, a German physician with a strong interest in astronomy and gravitational force, theorized that a magnetic-life-energy was exchanged between healers and patients during touch. (Gordon, 2006, p. 322) Despite the fact that energy transfer can happen through simple proximity, through interpersonal synchrony for example, “skin-to-skin contact plays an important role in facilitating the signal transfer.” (McCraty, Atkinson, Tomasino, & Tiller, 1998, p. 9) The three requirements to produce an electric current for signal transfer to occur: “a supply of electric charges (electrons) which are free to flow, some form of push to move the charges through the circuit, and a pathway to carry the charges.” (“Electricity and electric currents,” n.d., para. 2) Living beings are made up of billions of electrons; touch is one impetus that moves the electrons; and quantum entanglement of biophotons and biofields are the pathways that facilitate energy travel between various species.

Touch is considered to have phylogenetic primacy, meaning that non-verbal communication existed before verbal communication/language. It is therefore believed that humans are hard-wired to respond first to touch, over other forms of communication. Touch is also identified as possessing ontogenetic primacy, which means that humans first learn to communicate non-verbally. (Hertenstein, Verkamp, Kerestes, & Holmes, 2006) In infants, the other senses are under-developed; therefore, touch is the prominent method for all communication central to life including love, comfort, soothing, presence, and bonding. Touch is so important to babies, that without it they fail to fully develop physically and emotionally. Touch regulates physiological states, aids normal biological development, and plays a central

part in social development. (Montagu, 1986) Researchers Mary Carlson and Felton Earls assessed infants who were raised in orphanages without regular, motherly involvement or touch and they found, “muteness, blank facial expressions, social withdrawal and bizarre stereotypic movements.” (Carlson & Earls, 1999, p. 394) Sadly, the frequency of touch decreases as people age. Elderly humans often receive no touch if they live alone, are isolated from others, or are relegated to long-term facilities where individualized care and concern are insufficient. Strikingly, the symptoms of dementia, Alzheimer’s, and clinical depression tend to mirror those found in children raised in orphanages. Could these symptoms be influenced, even partially, from the declining frequency of touch that occurs with aging, and in Western culture in general?

Physiologically, touch plays a dominant role in life by acting as “a protective barrier between our internal body systems and the outside world.” (“Sense of Touch,” n.d., para. 1). However, it has further reaching benefits: “The University of Miami School of Medicine says it has carried out more than 100 studies into touch and found evidence of significant effects, including faster growth in premature babies, reduced pain, decreased autoimmune disease symptoms, lowered glucose levels in children with diabetes, and improved immune systems in people with cancer.” (Dobson, 2006, para. 4) Touch has been shown to decrease stress levels, as indicated by reductions in heart rate, cortisol production, and pain. In an early 1990s study, touch researchers found that “physical contact produced small but statistically significant decreases in heart rate, systolic blood pressure, diastolic blood pressure and subjective pain ratings.” (Fishman, Turkheimer, & DeGood, 1995, p. 77) Decreasing stress through noticeable reductions in heart rate, was demonstrated in a 1980 study and further confirmed by a subsequent study in 1985. In both, heart rates were monitored before any touch with the subject standing next to a familiar person, and then when the familiar person touched the subject on the wrist. In

each case, the resting heart rate increased when standing next to a person, yet decreased an average of 2.6 beats per minute when being touched by another. (Drescher, Gantt, & Whitehead, 1980) Studies have further illuminated stress-buffering qualities by examining cortisol levels in women, before and after touch with a domestic partner. They determined, “that positive physical contact provided by the partner before stress significantly reduced subsequent salivary-free cortisol responses to psychosocial stress in women...in addition, physical contact from the partner resulted in significantly reduced heart rate increase to the standardized laboratory stressor.” (Ditzen et al., 2007, p. 571)

Because touch decreases cortisol levels, it boosts the immune system by default. If the body is unable to terminate cortisol production in response to chronic stress, the immune system can be compromised. “Cortisol is ordinarily anti-inflammatory and contains the immune response, but chronic elevations can lead to the immune system becoming ‘resistant,’ an accumulation of stress hormones, and increased production of inflammatory cytokines that further compromise the immune response.” (Morey, Boggero, Scott, & Segerstrom, 2015, p. 3)

Touch also enhances the immune system by boosting the number of natural killer cells in the body. (Hernandez-Reif et al., 2005) These specialized cells are a crucial part of the immune system and help to protect against illness and disease by defending the body against viral and cancer cells. When the immune system is stressed, energy reserves are decreased and there is less energy available for other biological and emotional tasks. Touch also functions as an analgesic by inhibiting subcortical and cortical perceptions of physical pain. (Mancini, Beaumont, Hu, Haggard, & Iannetti, 2015) It is an effective treatment for both acute and chronic pain, which involve both physiological and psychological components. Even self-touch

mitigates pain; for example, when one bumps an elbow on a door and instantly starts to hold or rub the injured area.

From a psychological perspective, touch is vital to well-being as it transmits essential emotional information including comfort, gratitude, happiness, acceptance, validation, encouragement, support, and love. Touch directly increases the level of serotonin within the body. (Field, Hernandez-Reif, Diego, Schanberg, & Kuhn, 2005) Serotonin, a neuropeptide and natural mood stabilizer promotes feelings of happiness and confidence. Touch is effective for the reduction of anxiety: in 2008, 22 intensive care patients were gently touched by their nurse, while another 22 patients were not. The 22 touched patients showed, “significantly lowered levels of anxiety.” (Reinhardt & Reinhart, 2017, p. 5) New studies further reveal that touch helps alleviate depression, “people suffering from clinical depression may also often suffer from touch hunger [lack of touch]—and this can be seen in an area of the brain called the vagus.” (Kale, 2016, para. 9) When depressed people are given physical contact, depression levels fall and vagal activity increases. “Offering a reassuring hug to a person who is in pain or feeling down can actually benefit both the receiver and the giver; both people involved in the interaction experience more positive emotions and feel more strongly connected to each other.” (Cohut, 2018, Psych. Benefits) This may be a result of the release of oxytocin, another powerful hormone in the body, which increases feelings of connection, compassion, trust and bonding.

Like humans, social animals use touch for bonding, comfort, and as a stress buffer. For example, being groomed by a conspecific promotes a calming effect through reduction in heart rate and an increase in beta-endorphins. Further, touch through grooming is a significant factor within social hierarchy, and is even used to mediate conflict. (Reinhardt & Reinhart, 2017) Captive chimpanzees will engage in group grooming prior to feeding sessions where hostile

conduct is a possibility. The grooming is considered a “peacemaking strategy, both to forestall aggression and to reconcile after an aggressive dispute.” (de Waal & Aureli, 1997; Reinhardt & Reinhardt, 2017, p. 13) Touch, especially through the pleasant experience of grooming, is considered a type of “social glue” as it “motivates animals to stay in close proximity to each other as pairs or groups.” (Reinhardt & Reinhardt, 2017, p. 20)

Interspecies touch, or touch that occurs between differing species, also provides numerous benefits to humans. Along with relaxation, interspecies touch positively affects heart rate, blood pressure, and the release of hormones associated with feelings of well-being. In a study initiated by J.S. Odendaal and R.A. Meintjes, 18 humans and their companion dogs were measured for 15 minutes, while the dogs were gently stroked. Blood pressure and blood plasma were monitored for both sets of subjects and the results were meaningful: “petting the dog resulted in a significant decrease in blood pressure and a significant increase in beta-endorphin, oxytocin and dopamine not only in the dog but also in the person.” (Reinhardt & Reinhardt, 2017, p. 28) Petting an animal also mitigates anxiety. Researchers subjected and monitored 58 participants to a 2-minute exposure to a tarantula in glass jar. One third of the subjects were able to hold and pet a live rabbit or turtle during the exposure; the other third was given a toy rabbit or turtle to hold, the remaining third acted as a control group with no animal. The mean anxiety scores among participants petting a live rabbit (28.5) or live turtle (28.9) were significantly lower than those petting a toy rabbit (32.1) and a toy turtle (34.3), and lower than the control group (34.5). “These findings showed that petting an animal significantly reduced anxiety.” (Reinhardt & Reinhardt, 2017, p. 28) This referenced research only utilized intermittent touch, in the form of stroking or petting. Other experimental studies have further validated the beneficial effects of interspecies touch. In the early 1980s, a progressive study reported that blood pressure in humans

is lower when talking to or touching pets than when they are with fellow humans. (Katcher, 1981) Of interest, the animal doesn't have to be familiar to affect change in the human physiologic system. A 1987 study found that touch with a dog with which no previous contact has occurred, still alters human arousal level as measured by blood pressure and heart rate. Both are lower than when reading books alone. (Wilson, 1987) Although studies have shown that simply being near an animal is beneficial for mood and relaxation, for example, in classrooms that specialize in educating autistic children, or during visits to senior living facilities, the meaningful physiologic effects generated by touch with an animal are a predominant result of direct contact, i.e., touch. (Vormbrock & Grossberg, 1988)

Regrettably, touch has become overly sexualized, taboo, and excessively regulated in Western society. Coworkers avoid hugs or pats on the back; parents are not able to comfort another's hurt child; foster parents are cautioned not to touch the children in their care; children themselves are ardently warned not to allow anyone outside of their immediate family to touch them; teachers must abide by strict no-touch policies and cannot simply apply a Band-Aid to skinned knee; doctors are not allowed to share a comforting hug, even with a dying patient. "We have demonized [*sic*] touch to a level at which it sparks off hysterical responses, it sparks off legislative processes, and this lack of touch is not good for mental health." (McGlone qtd in Coccozza, 2018) Touch conveys so many positive effects that it is difficult to live, vitally, without it. "Touch is not optional for human development." (Linden, 2015, p. 4) With the disapproval, governing, and resulting decline of basic touch between humans, cuddling, stroking, or even hugging an animal can feel more comfortable and be socially acceptable. "Although we may normally prefer the support of a human being, under duress the quality of connection becomes more important than the origin of support." (Benda & Lightmark, 2004, p. 31)

Therapeutically, touch with animals may be as important as touch with other humans, and it appears to provide the same psychophysiological benefits. Touch with animals may actually provide more benefits, because they are less removed from Divine Consciousness/Source Energy than humans. Animals do not concern themselves with duality as they lack egos and live fully in the present moment, allowing them to function selflessly and unconditionally. Their ability to share/donate energy appears to occur, therefore, unconsciously, or without specific intention. This is contrary to how humans approach healing with touch, which generally requires purpose and thought. Dolores Krieger, founder of Therapeutic Touch, believed that the ability to help another heal is an expression of a deep inner desire to help or heal. (Krieger, 1975) Do animals genuinely desire to affect us therapeutically when we touch them? Possibly. Perhaps, though, it is their natural, uninhibited connectedness with Source Energy that facilitates positive, energetic effects. “On this planet, we [humans] are the only beings that are not tuned in to infinite awareness.” (Emery, 2013, p. 4) Emory believes that plants [and animals] are innately tuned in, which illuminates why we can access their energy through touch.

Animals as Medicine

The human-animal relationship is prodigious. From earliest recorded history, humans have idolized animals for their powerful therapeutic abilities. In Ancient Egypt, Anubis (a dog-headed god) acted as guide for souls on their journey through the underworld, and provided medical information to other gods. In classical times, God, appearing as a dog, was thought to visit and help the injured or ill with licks from His tongue. This idea carried through to Christian times, where St. Roch was cured of plague sores by his dog’s licking. In Elizabethan times, it was recommended that women seek companionship of a dog as a generalized remedy for various

ills. In the nineteenth century, animals became a common occurrence in mental institutions. It was believed that they helped create more pleasant surroundings by altering the feeling of confinement. They provided much more, however, and enlivened the patients, fostered bonding, and acted as confidants. Even Florence Nightingale, the founder of modern nursing, suggested in her personal notes written in 1880, that small pets offer valuable companionship for the ill. (Serpell, 2010)

Animal Assisted Intervention (AAI) is the latest label attempting to describe the therapeutic value animals deliver to humans. This expression is limited in breadth, as it implies a focus on mental health, or an emergent health crisis (i.e., a drug intervention, alcohol intervention, etc.), as “interventions” are often staged at a particularly critical point. Waiting for some critical point is inherently limiting with regards to the preventative effects that can occur during human-animal interaction. The term AAI also hints at the need for some extraneous, formalized action in order to retrieve and involve the animal. This is shortsighted: therapeutic value can, and may already be happening, quite naturally, with non-trained, familiar animals. Previous designations that fall under the human-animal bond include *pet therapy*, *animal assisted therapy*, and *human-animal interactions*. (“AAI Definitions,” n.d.) Each of these catchphrases, including AAI, is semi-appropriate, but none fully encompass the healing powers animals supply. As is typical for Western culture, rigid guidelines are being introduced, that may affect the ease with which animals naturally help us. The American Veterinary Medical Association as stated that, “Animal assisted interventions should be governed by basic standards, be regularly monitored, and be staffed by appropriately trained personnel.” (“AAI Definitions,” n.d., para. 3) These protocols are applicable, perhaps, in stricter institutional settings, but animals can, and do, deliver therapeutic value at home, at neighbors’ homes, with people met on walks,

in hospitals when accompanied by their non-professional humans, even in classrooms for show-&-tell. Certainly, in more institutionalized settings, formal guidelines need to be structured and implemented in order to honor and maintain welfare of the animals. It is assumed here that the welfare of animals in informal settings is paramount.

Studies have clearly elucidated the general health advantages of pet ownership. They tend to involve dog and cats, most commonly, and the resulting benefits are credible. Pet owners report a statistically significant reduction in minor health problems in the first month of ownership, and this reduction lengthens to at least the first year for dog owners. (Serpell, 1991) Dog ownership also extends the survival rate for individuals who have suffered from myocardial infarction. (Friedman, 1995) Having a dog lowers the incidence of depression, increases feelings of well-being, and extends lifespan among persons with HIV/AIDS. (Kabel, Kohsla, & Teti, 2015; Muldoon, Kuhns, Supple, Jacobson, & Garofalo, 2017) For women, sharing space with a dog significantly lowers blood pressure and heart rate during mentally stressful situations (Allen, Shykoff, & Izzo, Jr, 2001) These types of findings may stem from the idea that the simple presence of a pet provides a psychophysiological buffer, as many people regard their pet, dogs especially, as their closest companion and confidant, and rely on the pet for social and emotional support. Dogs, in particular, come in second to cats as the most popular pet in the world; however, dogs are the most commonly utilized animal in AAI. Dogs are eager, intelligent, agreeable, loving, and have been natural companions for humans, both adults and children, for thousands and thousands of years. (Kluger, 2018; McMaster, 2016; Miller, 2018) However, many human-animals studies rely upon psychiatric instruments, including questionnaires and scales that are vulnerable to subjective evaluation. Further, heterogeneity is lacking as studies have duplicate concepts and measurements. Basically, analogous studies are

conducted, over and over and over, with only the subtlest changes in variables. For example, repeated studies have examined how oxytocin increases in dogs and humans during interaction. (Beetz, Uvnäs-Moberg, Julius, & Kotrschal, 2012; Handlin et al., 2011; Kovács et al., 2018; Nagasawa et al., 2015; Powell et al., 2019) Oxytocin is an important factor within the human-animal bond, because it readies the body for healing through new cell growth, by prompting a generative environment. (Rovner, 2012) Researchers are certainly persistent in their efforts to prove that oxytocin is the cornerstone for bonding and feelings of devotion from both dog and human, as new studies addressing this subject are published quite regularly. This singular variable is but one option to explain the unusually successful human-dog relationship, but researchers appear bound and determined to continue this exclusive deliberation. (As an aside, there was no evidence of similar research that included cats' or horses' effects on increasing human oxytocin levels.) Myopic focus and lack of diversification in AAI research topics to date is disappointing considering that data obtained from human-animal studies is well-founded and promising with regard to health and wellness.

Besides providing loyal companionship and increased pleasurable hormones for their owners, dogs (and other animals) have a profound ability to affect authentic changes in mental, physiological, and energetic health. The simple presence of a dog elicits situational transformation. For children, venipuncture is one of the most daunting, terrifying procedures faced. It can cause considerable distress before and during the procedure. A 2014 published study indicated that children experience less pain and distress during venipuncture if there is a dog present. The study group included a total of 50 children; 25 in the experiment group that included a dog (EG) and 25 in the control group (CG). Total distress and cortisol levels were significantly lower in the EG group. Despite the fact that there were no differences in pain

scores between the two groups, exposure to the dog appears to reduce fear and anxiety, thereby generating increased feelings of well-being. “Children, especially those with health-related problems, show positive behavioral responses when a dog is present as it increases their self-esteem and feel more confident.” (Vagnoli et al., 2014, p. 5) Distraction, as a buffer, is a perfectly valid method for coping during stressful events, and is certainly preferred over sedation, or lack of a buffer.

Children naturally gravitate towards animals, and this holds true for children with Autism Spectrum Disorder (ASD). A 2009 study observed 14 children with ASD and their choice for interacting with a person (male or female), a dog, or objects (various toys). The test was performed on three separate occasions and each time, 100% of the children preferred interacting with the dog. (Prothmann, Prothmann, & Ettrich, 2009) The fact that the preference for the dog endured over all three tests suggests that novelty was not a factor. Children with ASD often struggle with verbal interactions, and communication with dogs may be easier, because dogs generally communicate their intentions non-verbally, or energetically. Families with ASD children are often under considerable stress that affects family functionality. A recent long-term study examined pet ownership and its effects on all members of such families. They found that a pet dog provides considerable functional improvement to the entire family unit. 20% of parents in the test group went from clinically high to normal stress levels after acquiring a pet dog. This is particularly interesting because adding another family member, like a dog, might contribute to stress; however, the opposite effect occurred, and stress was noticeably reduced. Moreover, an appreciable reduction in parent-child dysfunctional interactions occurred within the intervention group only. The reduction of stress continued over time. (Hall, Wright, Hames, & Mills, 2016)

Adults are not excluded from dogs' therapeutic positivity: in 2005, three groups of hospitalized heart failure patients were visited by either a human volunteer and dog, a human volunteer, or no visitor. The dogs were allowed to climb into patient beds for 12 minutes, facilitating direct contact. Numerous variables were measured before and after, including hemodynamic pressure, epinephrine and norepinephrine, and anxiety. The notable 24% drop in anxiety for the dog visitor group was statistically significant; whereas, the volunteer-only group dropped 10%, and the control group showed no change. Epinephrine, a stress hormone, dropped a significant 17% in group who had contact with a dog. The volunteer-only group dropped 2%, and the control group actually increased 7%. Left atrial pressure dropped 10%, and systolic pulmonary artery pressure dropped 5% for the dog visitor group. Both rose, in the other two groups. (Gawlinski & Steers, 2005) In heart-failure patients, simply decreasing anxiety and allowing the PNS to activate is of great value, particularly for the cardiac system.

In a separate study, salivary IgA responses were investigated where 55 college students were asked to either pet a real dog, pet a stuffed dog, or sit quietly. IgA is an immunoglobulin that plays a vital role in the immune system. IgA increased significantly only in the group petting live dogs, suggesting that interactions with pets stimulates positive immune responses. (Charnetski, Riggers, & Brennan, 2005) This study was productive, and while its utilization of dogs unfamiliar to the subjects certainly added to the validity of the project, a second group using known dogs might have provided further, valuable data. For example, do familiar dogs further boost IgA, and does test location influence the effect dogs generate? This data, in particular, could have profound effects for individuals with compromised immune function.

Dogs also have the unique ability of medical detection, and they are remarkably successful. Medical alert dogs assist people with life-threatening health issues, such as diabetes,

Addison's, and severe allergies. These dogs are able to smell changes in blood sugar and hormone levels. They are trained to warn their owners if levels fall outside the range of normal, thereby helping them avoid oncoming medical emergencies. Bio-detection dogs are also to detect the odor of volatile chemicals excreted by the human body during times of illness, including various cancers, malaria, and Parkinson's disease. (Wedderburn, 2018) Some dogs are even able to alert their epileptic owners of impending seizures, as much as 45 minutes in advance. "It's likely that seizures trigger a change in the body's electrical activity, the researchers say. And those changes can affect the composition of odor molecules that we emit through our sweat, breath, and, likely, urine." (Anderson & Jones, 2019, para. 7) The referenced change in the body's electrical activity is a change in vibrational frequency and dogs are sensitive enough to detect these disturbances. Early detection fosters safety: these dogs may remain close to their owners during a seizure to prevent injuries; alert a caretaker, family member, or emergency response system; fetch a telephone, alert device or medication; open a door or turn on a light; or provide comfort after the event. ("Seizure Alert Dogs," n.d.) This phenomenal ability to detect seizures is impossible with even the most advanced medical devices yet, after training, dogs achieve 100% accuracy in trials. (Anderson & Jones, 2019, para. 6) Contemporary medical equipment has failed at detecting the subtle energy bodies within, and emanating from the body; consequently, it has further failed at seizure prediction and detection. Canines, therefore, outperform even the most sophisticated medical instruments in this task. As mentioned previously, dogs do not have egos, emotional baggage, nor are they judgmental; accordingly, they do not experience perceived separation from Source Energy. Thus, their ability to detect subtle energetic changes may stem from a form of pristine bio intelligence that originates from Source Energy. Their bio intelligence is unadulterated, "like an umbilical cord

connecting [them] to the cosmos and feeding us in a way that most of the human species misses.” (Berne, 2011) This truth is evident for other animal species, as well.

Horses are equally sensitive beings, but have some unique qualities that present challenges for accessibility including: their size, the amount of food they consume, the cost of upkeep, transportability, and necessary living space. These logistical matters may prevent the general public from regular interaction with horses, which is unfortunate. The effect of horses on humans vary slightly from those provided by dogs, however their contributions to human health and well-being are just as important and substantial as that of other, smaller animals. Humans have been drawn to horses since the beginning of time, and throughout history horses have offered a uniquely calming presence, “Even ancient Greeks noticed how both unstable and ‘typical’ people seemed calmer and happier when interacting with a horse.” (“Equine Therapy,” 2015, para. 3) Gentle, social creatures by nature, these large animals live in herds where the relationship dynamics can mirror those of human family systems. (Vivo, 2011) The social and responsive behaviors shared by humans and horses, facilitate a natural connection.

Within the larger context of AAI, there are various therapies involving horses. Hippotherapy encompasses “the purposeful manipulation of equine movement as a therapy tool to engage sensory, neuromotor, and cognitive systems to promote functional outcomes.” (“Hippotherapy,” n.d.) The predominant goals of hippotherapy are improving neurological functioning and cognitive skills through horse-specific movements that are implemented, at all times, by a professional speech, occupational, or physical therapist. Equine-assisted learning (EAL), and equine-facilitated experiential learning (EFEL) involve equine-assisted activities geared towards the development of life skills including trust, respect, perseverance, honesty, courage and communication. “Equines use mostly non-vocal communication and are in tune with

human behavior. This can help participants to better understand and learn how our non-verbal communication might be impacting or influencing others in their lives.” (“Equine Assisted Learning,” n.d., para. 2) Equine-facilitated psychotherapy (EFP) is a newer technique that pairs horses, humans, and traditional psychotherapy. “Clients learn basic horse care and horsemanship skills while engaging in situations that encourage discussion about the problems they face...working with a horse and walking around a therapy center releases energy, encouraging clients to open up to their treatment.” (Boatwright, 2019) EFP is generating distinctly positive results. Troubled youth and veterans with PTSD especially, are helped through EFP, but it is rapidly effective for many mental health issues, including depression, anger management, mood disorders, and schizophrenia.

As prey animals, horses are highly sensitive to even the subtlest changes within the environment, or those around them. This vigilance is how they survive, and it carries over into their relationships with humans. They are so sensitive, in fact, that they can perceive human the heart rate. (Keeling, Jonare, & Lanneborn, 2009) This perception allows horses to pick up on emotions like anxiety, anger and fear, which naturally increase the human heart rate. Unlike dogs, who might try to pacify these emotions, horses offer the unique response of reflecting them right back. This is one of their gifts to humans: “the horse acts like a large biofeedback machine, providing the client and therapist with information regarding the client’s moods and changes within these moods.” (“EFEL,” n.d., para. 4) This type of therapy is effective, very quickly. The human client is given the immediate opportunity to change, and the horse will then reflect that as well. Very few, if any, human psychotherapists could get away with mirroring a client’s emotive behavior during a therapy session. Such outrageous, bold behavior from a human therapist would likely be met with resistance, shock, anger, or complete withdrawal; but,

when a horse responds to human emotions, people tend to respond back, rather than react. “If someone were working with an at-risk kid and said, ‘You have anger issues,’ the kid might not take any advice. But a horse will sense that client’s anger and shy away. The kid will see that and say, ‘What can I do, I don’t want to hurt the horse.’ This teaches a lesson about empathy and the effect anger can have.” (Enget qtd in Boatwright, 2019, para. 7)

Both EFP and EAL have been utilized very successfully with native Aboriginal youth. Displaced Aboriginals have become marginalized and disadvantaged, leading to high levels of depression, emotional and sexual abuse, unemployment, intergenerational trauma and incarceration. Typical Western therapies and interventions are culturally inappropriate as they are clinically based, and thus ineffective because they are regionally unavailable and unfamiliar to this population. However, native Aboriginal people have a long history with horses, and many were accomplished horsemen and women. Using this existing historical, and possibly energetic connection, new EAL studies are proving efficient at influencing the health and well-being of Australian Aborigines. (Coffin, 2019) In 2015, 270 Aboriginal youth (age 6-25) participated in a one-year long EAL study focused on increasing social or emotional well-being, or leadership. Drug addiction, mental illness, and self-harm are common among Aboriginal youth and directly affect self-awareness, self-regulation, and the ability to engage in healthy, connected relationships. To date, “government initiatives and various health interventions have failed to adequately address these health disparities, and often do not make allowances for the complex social, emotional, and spiritual needs of Aboriginal youth in Australia.” (Coffin, 2019, p. 2)

With conventional approaches failing, this study paired the historic horse connection with culturally secure therapeutic exercises, in order to develop an appropriate intervention to actually foster positive, empowering change. The protocol included equine ground work and riding

exercises, after a “body-check-in” at the beginning of each session. This check-in was included to “promote self-awareness and self-regulation of body, emotions, thoughts and environment, regardless of format.” (Coffin, 2019, p. 3) Attendance in this program was stellar and had a positive effect on attendance rates on regular (non-EAL) school days. Self-report questionnaires were utilized, as well as video and practitioner observation reports. The resulting data was remarkable. Participants were asked, pre and post intervention, about sleeplessness due to worrying, and about self-anger. The results indicated statistically significant improvements in both areas. Analysis of posture and body language revealed broad improvements in confidence and self-regulation. The body-check-in was difficult for many, as it required quiet time with eyes closed, in order to create a state of calm. Participants demonstrated marked improvement in this activity over time. These improvements were also noted, subsequently, by caregivers, parents, and teachers and reported as improved self-regulation of stress, improved anger management, and decreased antisocial behavior. Of particular interest, is the incredible transformation of a nine-year-old boy who endured severe behavioral, emotional, and social issues, causing intense (and likely unwanted) verbal and physical tics.

Improvements in his ability to self-regulate were observed both short and long-term during the program. It was observed on collection he would be ticking, sometimes quite severely, and during the initial grounding sessions he would often struggle to even be able to close his eyes for more than 10 s. What was transformational was his complete change as soon as he was in the presence of the horses. This was captured on video. The ticking would completely disappear. He was never around horses before, and while he was never scared, he was initially wary and spent most of his sessions with the youngest mare in the herd who was

not started yet under saddle and had received very limited handling apart from some halter and float exercises. From the very first contact session there was an instant connection between this boy and the horse, every time he left the mare would exhibit behaviors similar to herd separation calling out and walking the fence. (Coffin, 2019, p. 7)

With no horse experience, he chose a horse with limited handling experience and the bond, for both, was immediate. Did he choose her because she was similar: young, undisciplined, perhaps underdeveloped? Did this young mare actually choose him by responding to his wariness? In a creative, quantum world, it is likely that there was an invisible, energetic connection, that both recognized, intuitively, but perhaps unconsciously.

Another young female participant in this study was expressing how exhausted she was from not sleeping. The horse next to her immediately laid down in a relaxed, easy manner, which was unheard of for this horse. The girl laid down on the horse's chest, and they both rested together for 20 minutes. Because of their innate sensitivity and mirroring-capability, horses may engage with individuals who are lacking or struggling in some specific area. Paired together, working in unison, energetic imbalances can be adjusted. Horses energetic connections with humans exist without filters and, when allowed to, they can provide/donate the energy or 'knowing' we may be missing. In a groundbreaking study involving telepathic interspecies communication, animal communicators asked horses what they would like their emotionally damaged riders to know. Red Star a 23-year-old gelded therapy horse said, "Soak us up...walk, stand and sit within our aura, as softly as possible, to feel the ancient strength and steadiness of a horse. Sort of use our energy as nutrition for a while, without even trying. We can take them (veterans) in and let them drink from our energy, and they can just relax. It can feel like

medicine; we are medicine if you want it.” (Erickson, Fisher, Woelk, Buckner, & Ashley, 2016, p. 414) In this situation, the gelding appears to possess a confident awareness regarding his ability as a natural healer.

Horses seem to possess an uncanny ability to intuitively connect with adults struggling with issues similar to their own. This was demonstrated regularly at Rocky Top Therapy Center in Texas, which has unfortunately now closed. Rocky Top successfully used EAP to help children with disabilities and veterans suffering from PTSD. “The bond our clients make with these horses is incredible. Oftentimes, they pick each other out. We have some horses in this pasture that have PTSD—they were involved in trailering accidents or were abused by their owners. It’s amazing, we’ll take a soldier who’s closed and tight with PTSD, and the horse will come over and pick him out. It happens all the time.” (Knox qtd in Boatwright, 2019, para. 24) PTSD is resistant to conventional therapeutic interventions like traditional talk therapy or overly demanding exposure therapies, as they often incorporate retraumatization. (Hilpern, 2008; “Man O’ War,” n.d.) Yet horses are able to transcend these barriers and work very effectively with PTSD survivors by engaging in an in-the-moment relationship that requires focused attention, nonverbal and verbal communication, creativity and perseverance. Horses succeed where human therapists fail. Virtually all published research in the area of EAT for the treatment of PTSD demonstrates positive, statistically significant results (Burton, Qeadan, & Burge, 2018; Merkiesab, McKenchniea, & Zakrajseka, 2018; Monroe, Whitworth, Wharton, & Turner, 2019; Shelef et al., 2019) that carry forward after completion of the programs. (Lanning, Wilson, Woelk, & Beaujean, 2018) Unfortunately, many of these programs are limited in how many participants they can help, or they are cost prohibitive. The Man O’ War Project currently pairs veterans with horses for an 8-week long EAT program, and uses pre-and-post MRI scans to

determine if EAT is helpful in lessening the severity of PTSD symptoms that are all too common among veterans. The cost is \$15,000 to enroll even one military veteran in the project. While the costs aren't passed on to the veterans, limited funding severely restricts the number of participants who might be helped. The time constraints and manpower involved with performing MRI scans and their subsequent analysis are also significant.

Riding a horse fosters notable changes to human physiology; specifically, it improves balance, posture, and motor function, particularly in people with disabilities, neurological or intellectual deficits (including autism). (Kang, Lee, & Jeong, 2013; Kwon, Sung, Ko, & Kim, 2019; Winchester, Kendall, Peters, Sears, & Winkley, 2002) The mechanism for improvement has always been attributed to the gentle motion of a horse's gait at a walk. However, according to quantum physics, both horse and rider are directly exchanging energetic information during any encounter, even more so, through touch. Because riders may be limited in how their bodies fit on a horse, adjustments are often made to facilitate close(r) contact, as saddles create significant barriers between horse and rider. For example, in an EAT study involving children with sensory disabilities, foam rollers were used instead of saddles in order to promote more direct contact with the horse. (Heffernan, 2017) Other studies have utilized blankets, rather than saddles, in order to allow the rider to be directly influenced by the horse. (Potter, Evans, & Nolt, 1994) "Horseback riding offers more sensory-motor stimulation and a bond between rider and horse that cannot be stimulated artificially in the clinic or with an inanimate horse." (Sterba, Rogers, France, & Vokes, 2002, p. 306) Once again animals, in this case horses, exceed therapies offered by modern, conventional medicine. The energy we access from horses, through touch, "increases the flow of information to the brain and nervous system, which allows our

human systems to receive the nourishment needed to recharge ourselves and connect to bio-intelligence.” (Berne, 2011, Observations Section)

White Lightening, a filly and new therapy horse answering a question (through an animal communicator) about her rider’s low self-esteem, “Sometimes you form a wall around you....If you don’t put yourself in a sharp, cold, stone-hard case, we can nuzzle you, feel you, breathe into you. Do you ever watch us, how horses do these things? We nuzzle, massage, sniff, breathe in and out and place our bodies not only next to but within the shape of each other. It makes us trust and know one another deeply. Maybe you can try this. Lean into a horse. Wrap around us with your torso like we do (not so much your hands and arms, but with your whole body and heart).” (Erickson, Fisher, Woelk, Buckner, & Ashley, 2016, p. 422) Routine interaction allowed the horse to perceive an area where the veteran needed help, and the horse responded with appropriate energy and some sense of knowing that touch was required.

Animals’ effects on us are much greater than the simple pleasure they provide. Heartmath studies have shown that “Horses impose their very low frequency rhythms on humans. The horses’ coherent state is influencing humans, more than the other way around.” (Freund, 2016, para. 14) They are able to intuit and perceive emotional and physical subtleties, unseen by conventional medicine, and respond by giving us their energy. “What our culture is just beginning to realize now (but mainstream science has not yet grasped) is that animals themselves are by nature ‘people whisperers,’ and they have, whether innately or intentionally, the capacity to both restore and to sustain us in ways that we have either forgotten or never imagined.” (Benda & Lightmark, 2004, para. 1) Animals, as energy donors, move into the realm of healing, where “the practitioner is merely acting as the catalyst to allow the healer to heal him or herself, and to access and utilize a higher vibrational field of energy.” (Gordon, 2006, p. 31)

The donation of energy is akin to putting more gas in the tank in order to continue forward motion. This therapeutic dosing has the potential to vitalize even the most skeptical recipient, but may foster actual healing if used intentionally and mindfully.

The benefits of AAI have been well-documented, but acceptance from academia and the Western medical community is still apathetic. Research involving animals often requires more flexible conceptual design because animals move, become unfocused, may become nervous in new environments, etc. The interventions themselves may lack rigorous systemization due to limited technology with regards to specific measurements. Further, AAI studies tend to consist of small sample sizes that vacillate between the extremes of similar subjects who are already comfortable with animals, or overly heterogeneous populations. Lack of control groups also furthers decreased credibility. These confounding factors, all too frequently, deem valuable AAI research data anecdotal and trivial. Ironically, rigorous, peer-reviewed research does contribute to theoretical knowledge, but its rigid requirements are failing at mollifying the broken, impersonal Western medicine paradigm. At some point, less rigid research standards may lead to more individualized, creative, effective medicine, “We should remember that anecdotal observations are more than fleeting descriptions of random experience, but in fact the ubiquitous origin of randomized controlled trials.” (Benda & Lightmark, 2004, p. 31) While the majority of published studies have focused biochemical alterations, or utilized controversial, subjective qualitative data, one variable has held strong: animals, somehow, remarkably influence human psychophysiology. Research involving human-animal therapeutic interactions is increasing, despite design criticism and execution limitations. Unsurprisingly, the data is too promising, and conventional medicine has remained unsuccessful at repressing it.

Chapter 6: Methods and Materials

Methodology

This research study followed a quantitative quasi-experimental approach. Three case reports are also included, to visually illustrate energetic changes within the HES, while subjects were under the influence of direct, steady touch with a horse or a dog.

Research Design

Subjects underwent a baseline, or before-touch (BT) Bio-Well scan (Bio-gram images of all ten fingers) according to Level 1 Certification standards. A second scan during direct, steady touch (DST) with either a dog or a horse, followed.

Variables

The dependent variable for this study was direct, steady touch with a dog or a horse. The independent variables, which were expected to change during the physiological stimulus from DST included: general energy, chakra size/activation, stress, organ system balance, overall energy reserves, and immunity.

Energy Field describes the distribution of general energy (of light) in Joules (10^{-2}), within the body, for each subject. Healthy individuals are known to operate and thrive within the specific range of 40-70 Joules.

Chakra Activation/Size is quantitatively estimated through internal and external energy flows, and correlated to the Ayurvedic medicine system. As each chakra is associated with particular organs and systems, the size of the chakra then corresponds to the energy within the related organs and systems. The parameters for size are calculated in Joules (10^{-2}), as compared to thousands of healthy individuals. Optimal functioning is within the range of 4.0 to 7.0 Joules (10^{-2}).

Stress coefficient utilizes the parameters of all ten Bio-grams in comparison to the statistical specifications of healthy individuals. Stress is detrimental to health and when an individual strays outside a normal range, pathological states may develop. The stress coefficient variable is “one of the most important methods for analyzing the psycho-physiological state of a person.” (Korotkov, 2014, p. 166) The stress coefficient here, characterizes the level of physiologic anxiety, or reaction, to both internal and external forces. It is also correlated to SNS/PNS balance.

Organ System Balance provides information on energy parameters for 31 different organs and systems that are present and viewable on both hands. This measurement is directly correlated to the ANS. A significant imbalance (more than 20%) will be presented as highlighted bars within Bio-Well Software tab. Imbalance is an indication of prioritization by the body, or where the body needs help in reestablishing optimal functioning within the ANS. When more than seven systems are highlighted, a notable loss of balance between the SNS and PNS is occurring. “Positive changes within balance characterize the growth of parameters reflecting parasympathetic activity and the decrease of parameters which reflect the degree of sympathetic regulation and centralization of heart rhythm.” (Konstantin G. Korotkov, personal communication, April 4, 2020)

Energy Reserves reveals the functional energy of the body through representation of the reserves of cells. This occurs by computing the energy parameter of any particular organ, and indicates the amount of energy available for said organ or system.

Immune System energy, optimally, should be between 4.0 – 7.0 Joules. Numbers outside of the normal range may indicate that the immune system is compromised, or fighting illness.

Sample Size and Selection

Human subjects were recruited by word of mouth. A total of 19 participants volunteered for this project, 17 were included in the study. Data from my personal scans is included, increasing the total number of subjects to 18 ($n=18$). Two children, under the age of 10 volunteered with permission from their parents; however, capturing adequate finger scans proved challenging as the children had a difficult time correctly placing their fingertips against the Bio-Well lens. Their scans were therefore excluded due to misalignment of vertical finger positioning, and lack of uniformity in sizing of opposing fingers. Of the remaining participants, some identified as animal lovers, others dog lovers specifically, and the rest identified as non-animal people. Subjects ranged in age from 14 years to 79 years old. All of the animals involved in this research appeared to participate readily and happily.

Data Collection and Tools

The participants were informed of the purpose of this research project. All human subjects provided verbal consent: 1) to be scanned BT and DST with an animal; 2) allow their data to be used anonymously for this project. The data collection process was relaxed and all of

the subjects were enthusiastic regarding participation, thus verbal consent conformed with the overall atmosphere of the project. This casual approach was intentional, as it mimics the mellow manner in which animals effect the HES. The Bio-Well GDV was utilized to provide BT and DST measurements of the independent variables for each participant. None of the subjects were even remotely familiar with the Bio-Well. Some individuals were scanned with their own pets, and others were scanned with unfamiliar animals. Four participants were scanned more than once, on separate dates. In order to preserve anonymity, each subject was assigned a random identifying number.

Standards of Time and Measurement

The data collection process required flexibility due the unpredictability of animal movement. During any scan, if DST was broken, the entire scan was discarded and begun again. In some situations, the BT and DST scans were accomplished quickly. In others, there was a delay between the two scans while the animal shifted, needed time to settle, or if direct, steady contact was broken and an entire new scan was required.

Research Study Procedures

The Bio-Well GDV device was connected to a laptop, plugged directly into an electrical outlet. The Bio-Well lens was cleansed and calibration of the unit was performed.

Pre-Test

Subjects were each given a brief explanation that the energy emanating from their fingertips would be measured both before, and then again during direct steady touch with an

animal. They were provided with specific instructions on how and where to place their fingers inside the Bio-Well device. For measurements captured in bright areas, a thick towel was draped over the forearm and hand, in order to prevent light leaks from seeping into the Bio-Well device. Filters were not used with scans. It was important to view the totality of the HES, under the influence of DST with an animal, without filtering pertinent data. “Bio-grams without filter carry information about the current conditions of the energy organs and systems in a given moment in time. They reflect the particularities of the autonomic status, that is, effects of both physiological and psychological processes.” (Korotkov, 2017, p. 152) Emotions and thoughts are as energetically powerful and influential on the body as other physical or chemical processes, so it was important to include the entirety of each person’s HES. Further, both self-reported animal lovers and non-animal subjects were scanned. Including both psychological and physiological information from the scans allowed for the possible detection of differences in response between animal lovers and non-animal lovers.

DST with Dogs

Scans with dogs often involved unique methods for maintaining contact, as both of the participant’s hands needed to be free for the scanning process. Subjects were permitted to hold the Bio-Well with one hand, while scanning the other. This facilitates better finger placement and vertical orientation. For example, if a subject was sitting on a couch for their initial BT scan, the dog was invited to lie against their leg during the next scan. Or, if the dog was resting quietly on the floor, the subject could put their bare feet on the dog for the subsequent scan. Some participants had their dogs sit on their laps. The dogs were allowed and encouraged to find comfortable positions, and scans were then completed. In all cases, both of the subject’s hands

remained free, and direct, steady contact with the dog was maintained with another part of the body.

DST with Horses

Measurements with horses were accomplished over three separate days, with several participants each day. A card table was erected to hold the laptop and Bio-Well device. Calibration and lens cleaning were performed. The first and third days, a horse was haltered and led to the card table set up outside, near the barn. The second day, another horse was haltered and led directly into the barn due to rain. Each horse was provided with a bucket of hay for distraction, to minimize movement. For all horse scans, an assistant was utilized, and she was instructed not to touch the horse during the scanning process. On the left side of the horse, subjects were asked to lean onto the horse with their belly, thereby making direct, steady belly-to-belly contact. Opposite of the subject, on the right side of the horse, the assistant held the Bio-Well over the horse's back, enabling easy scanning accessibility from a height standpoint. Subjects were thus facing the Bio-Well, and simply reached up and forward for each scan. They directly touched the horse's shoulder with their other, free hand, while belly-to-belly contact remained constant. The process worked surprisingly well, but would not have been possible without an assistant. Her help enabled the subjects to maintain contact with the horse, thereby providing clean, uninterrupted scans.

Ethical Considerations

Care was taken that all of the animals remained comfortable. If a dog wasn't amenable to being calm and still, scans weren't attempted. Essentially, the dogs were given the choice to participate and be touched, or wander off. The horses were haltered, but not tied, and lead ropes were held by subjects or friends. The horses were given the opportunity to examine and sniff the Bio-Well device, card table, and cords, which afforded them the time and space to decide to relax and eat.

Chapter 7: Data Analysis and Results

The qualitative, pictorial data generated by Bio-Well software is detailed, valuable, and engaging. Due to space limitations, eight of thirty-four case reports were randomly selected, in order to document the pictorial representations of BT and DST scans. The Bio-Well scan reports provide valuable visual reference regarding the real-time changes that occur BT and DST. Despite the fact that they are supplying highly detailed, credible data regarding the current state of the HES, these pictorial representations are easy to understand for the majority of people. A quantitative analysis of the comprehensive results follows the case reports.

Qualitative Results: Case Reports

Case Report: Subject 109: Female, Adolescent, Animal Lover, Tested with Unfamiliar Horse

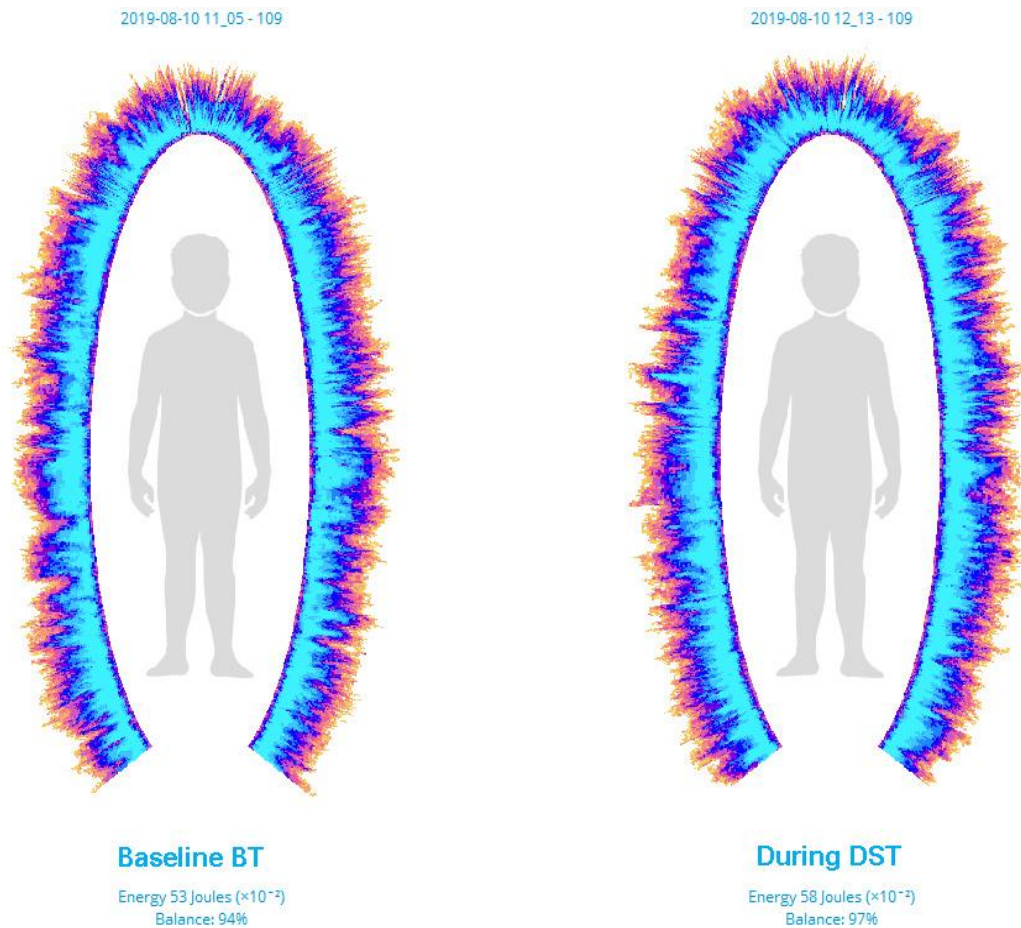


Figure 8: The baseline (BT) scan reveals a healthy adolescent. The field surrounding her body is cohesive, balanced and within the range of optimal functioning. There are few dark striations, with the exception of the head area (indicative of internal activity). Upon direct, steady touch with an unknown horse, the subject's Joules increased from 53 to 58, putting her even further into the optimal range of 40-70 Joules. Her energy field enlarged and "softened," indicating additional energy availability and better energy disbursement throughout the entire body. Balance increased slightly.

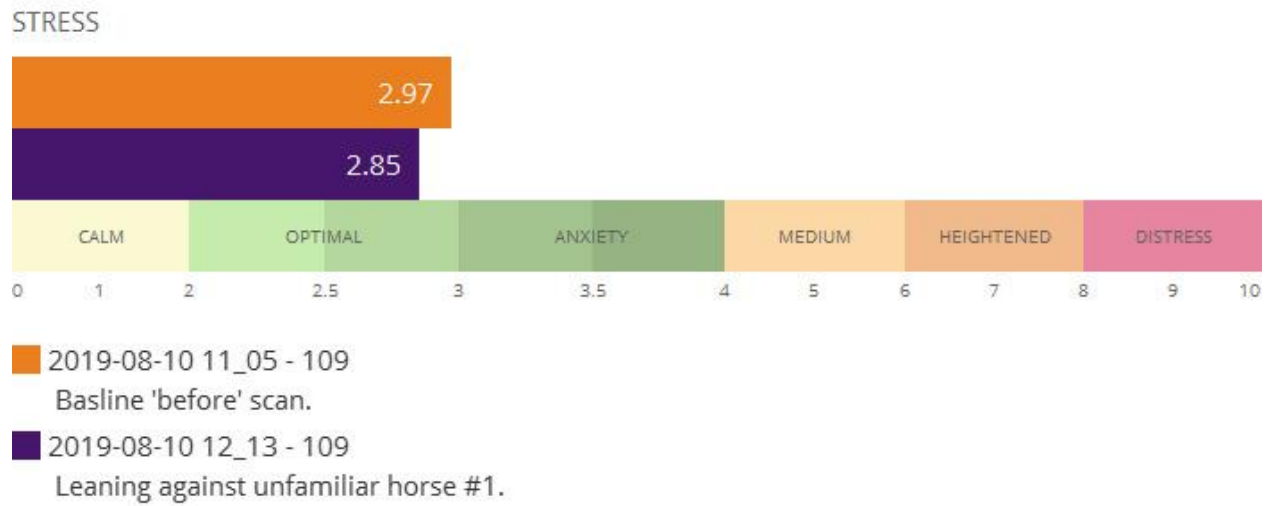


Figure 9: DST with a horse provided a 4.21% decrease in stress.

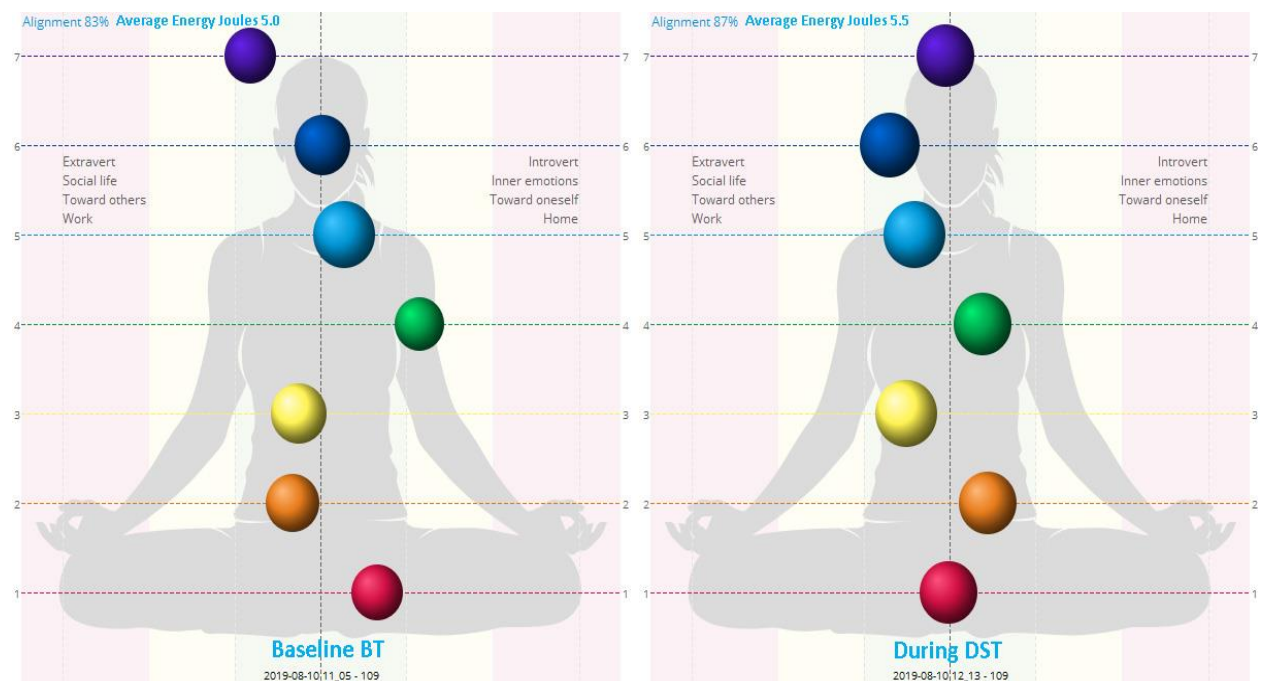


Figure 10: The subject's average Chakra size enlarged by 10%, simply with DST with a horse. Her alignment increased slightly.

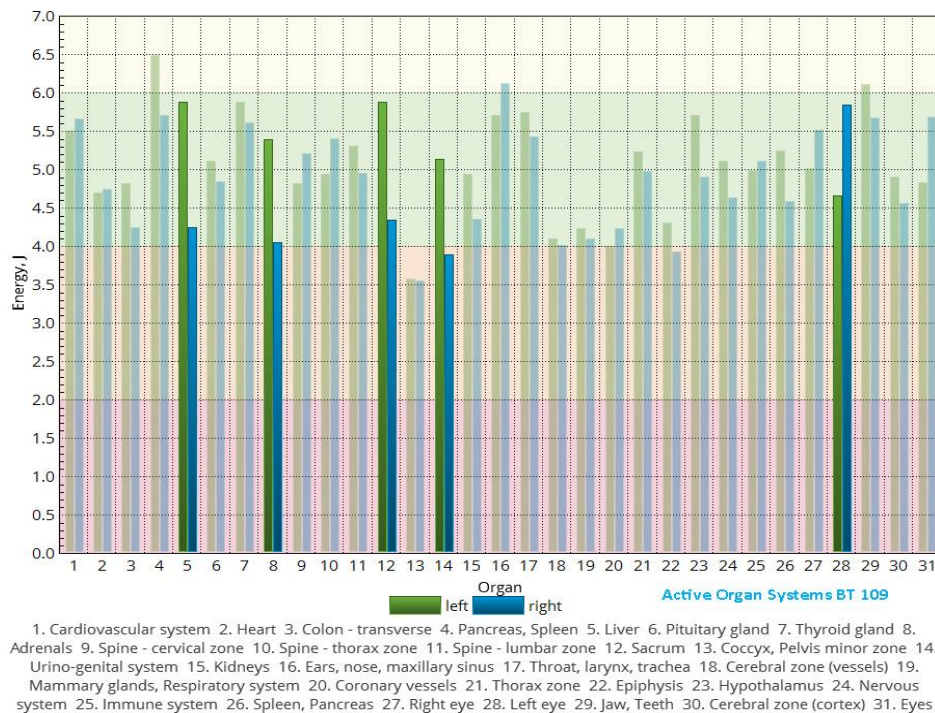


Figure 11: The subject had five imbalanced organ systems at the BT scan. This is an indication of heightened sympathetic activity, resulting in an imbalanced ANS.

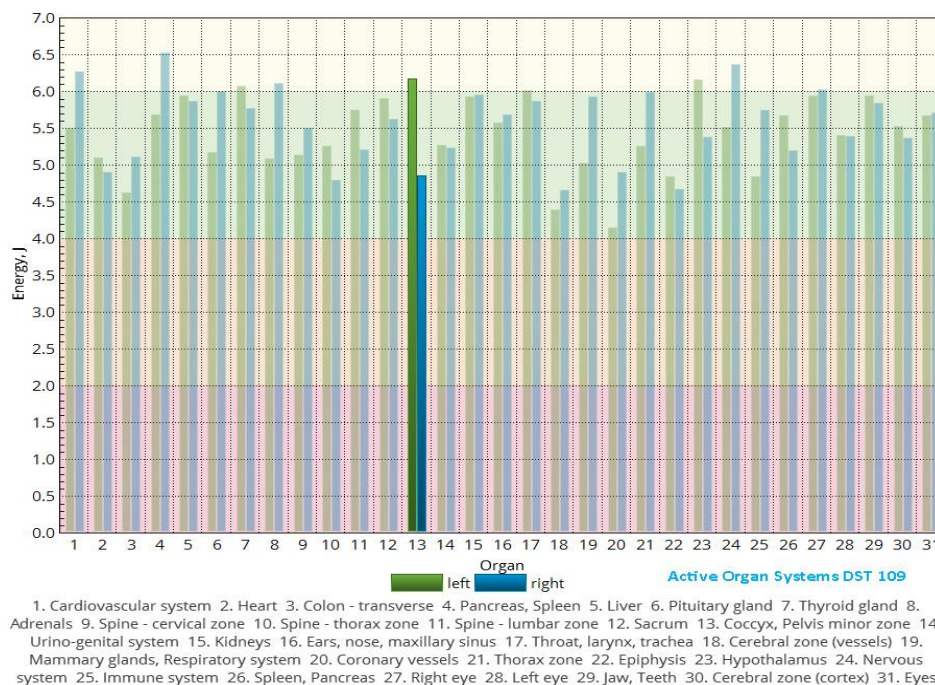


Figure 12: During DST, the subject's nervous system balanced almost completely as indicated with only one resulting imbalanced organ system. This 80% change is exhibitive of increased activity within her PNS.

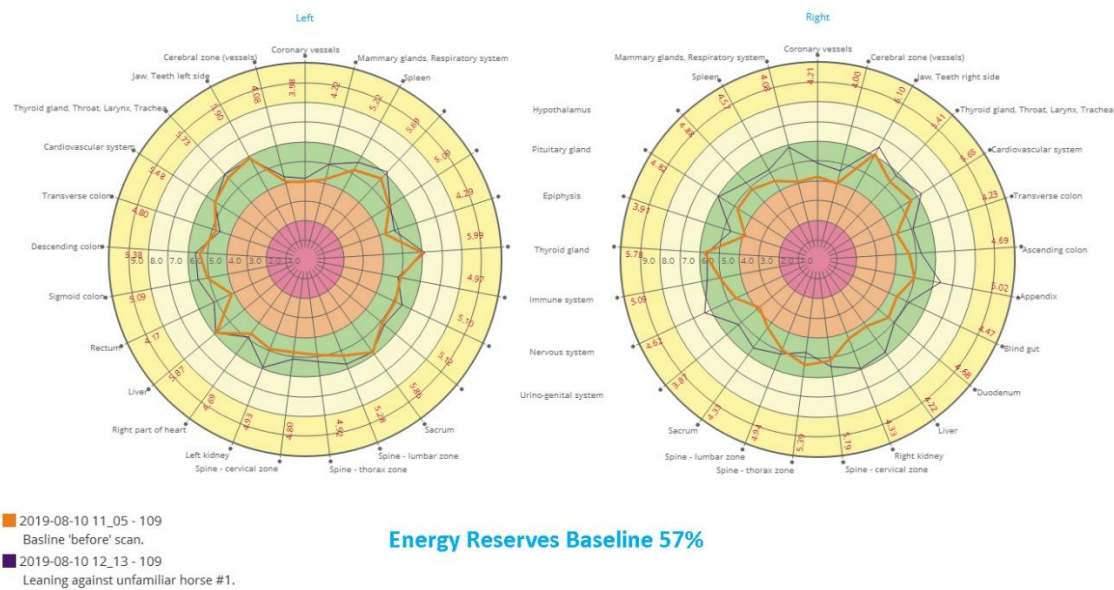


Figure 13: BT scan revealed energy reserves of 53% with a fairly uniform energy diagram (ORANGE LINE), indicating sufficient energy distribution and usage within the body. The diagram on the left is larger than the right, indicating some imbalance.

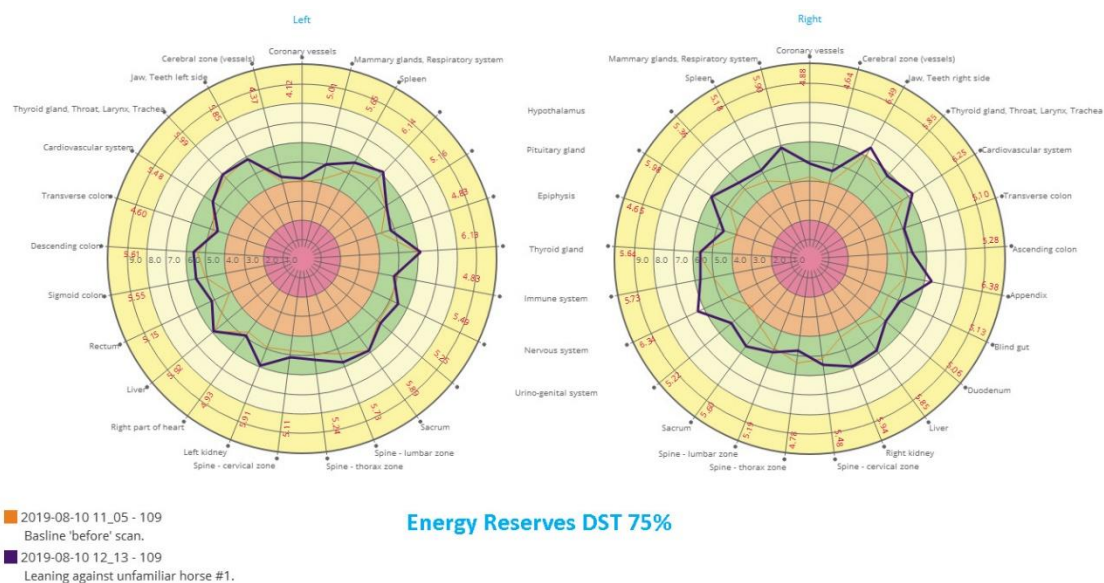


Figure 14: Upon DST with a horse, this subject's energy diagram softened further and expanded noticeably, indicating more energy availability and more uniform distribution/usage within the body. The size of Left & Right diagrams equalized. Her energy reserves jumped to 75%, which is a 42% increase.

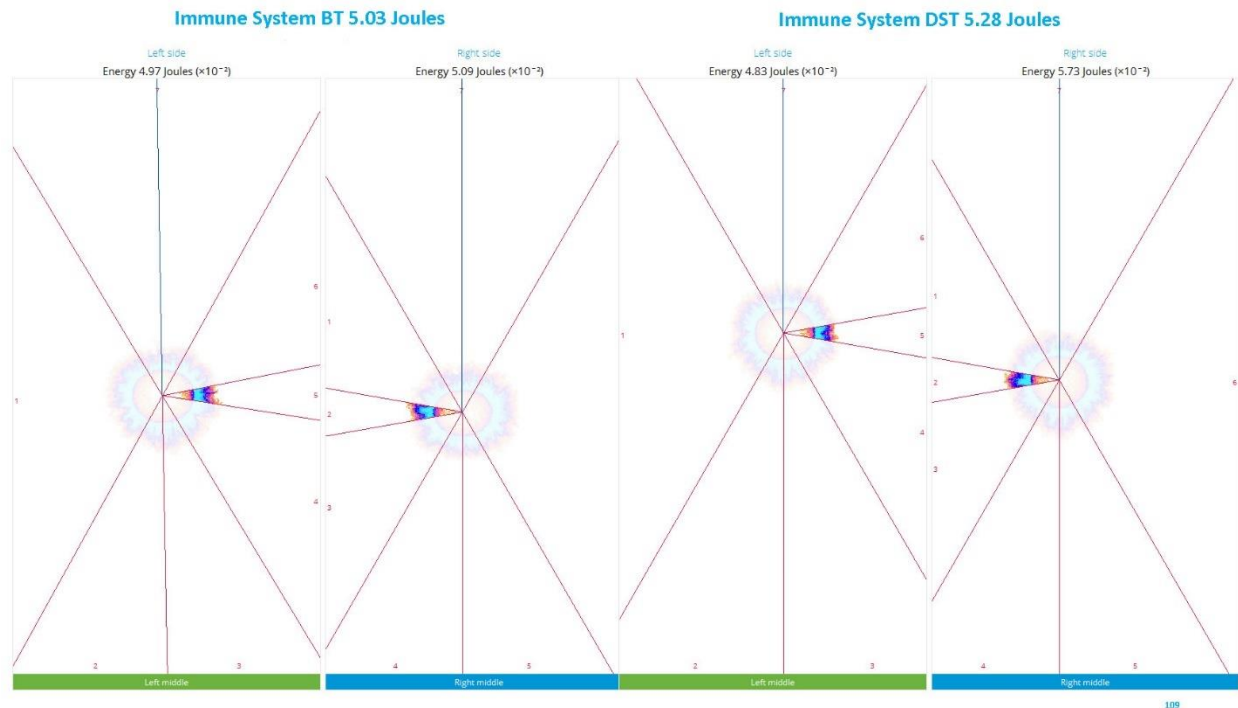


Figure 15: Energy within the immune system was increased from 5.03 to 5.28, or 4.97%, simply as a result of DST with an unknown horse.

Case Report Discussion: Subject 109

The BT scan of the adolescent revealed a healthy young person. Even at baseline, her systems were functioning within optimal levels. Upon DST with an unknown horse, her measurements continued to improve, moving the subject further into the optimal range of functioning. Despite the fact that her stress level was acceptable, it reduced even further upon touch. Of particular interest were the increase in parasympathetic activity within her organ systems and the significant increase in functional energy reserves while maintaining contact with the horse. Although this subject seemingly had little benefit to gain, the results from DST with a horse were valuable to her HES.

Case Report: Subject 102: Male, Adult, Non-Animal Person, Tested with Known Horse

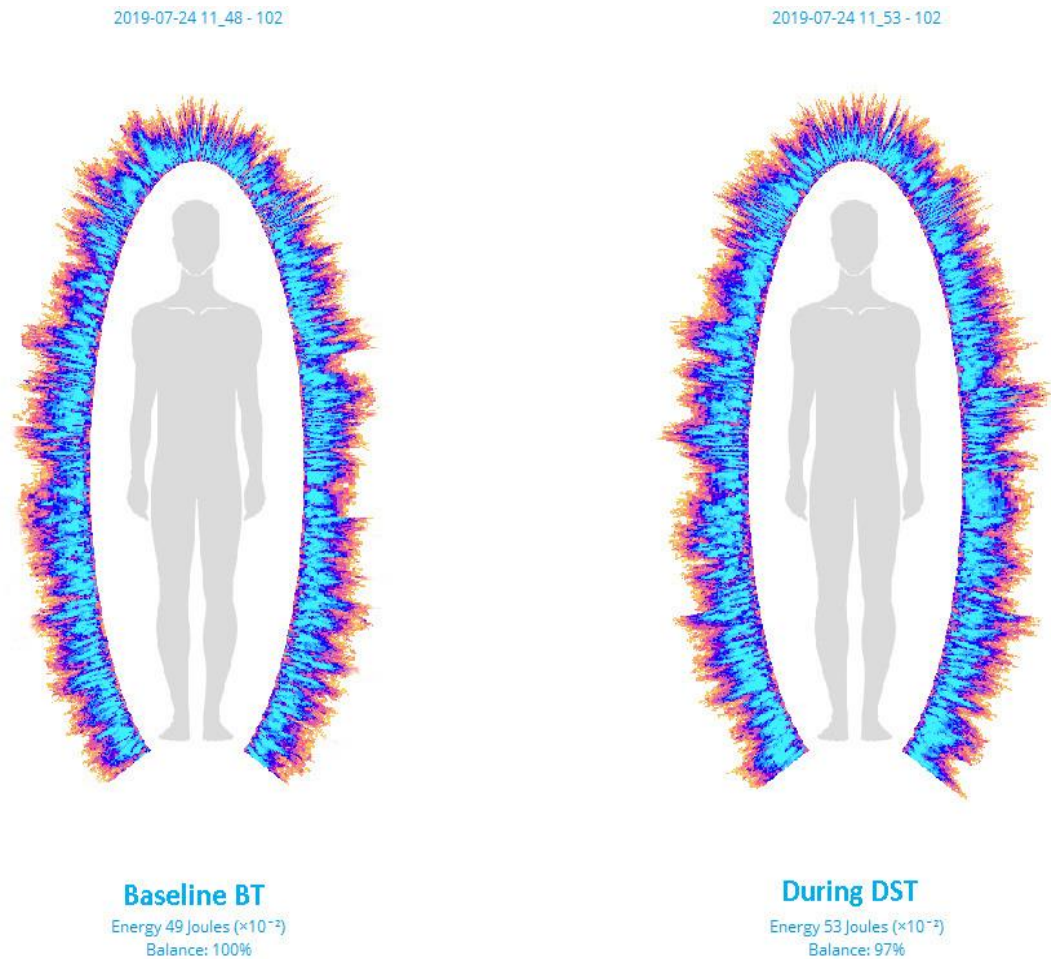


Figure 16: The subject's BT scan shows heavy striations, which is an indication of heightened activity within multiple systems. However, with DST of a known horse, the subject's Joules increased from 49 to 53, boosting him further into the optimal functioning range of 40-70 Joules. His energy field enlarged and softened, which indicates more energy availability and better energy distribution throughout.

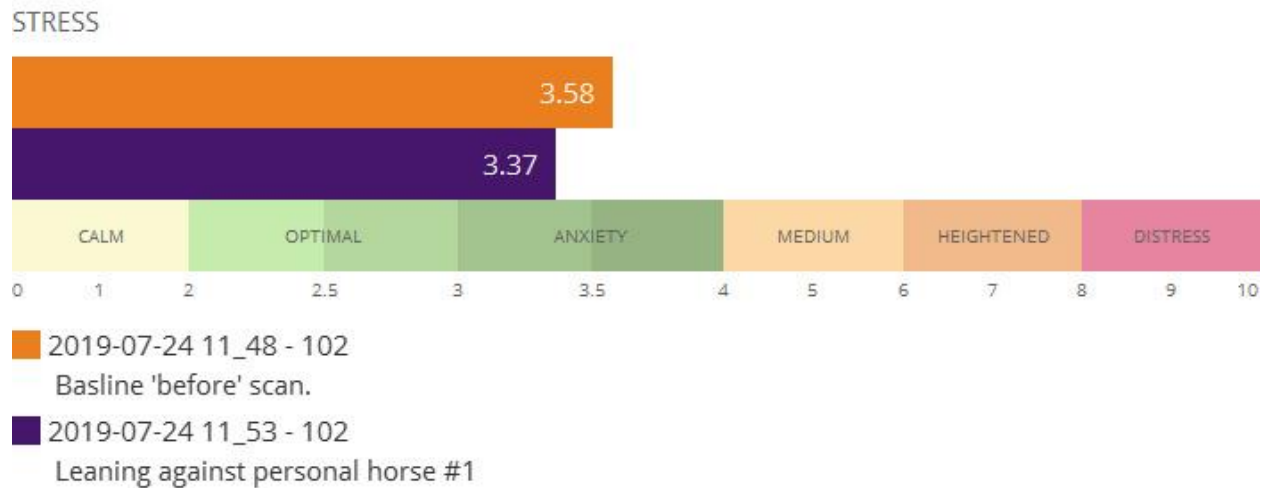


Figure 17: DST with a horse resulted in a 5.87% decrease in stress.

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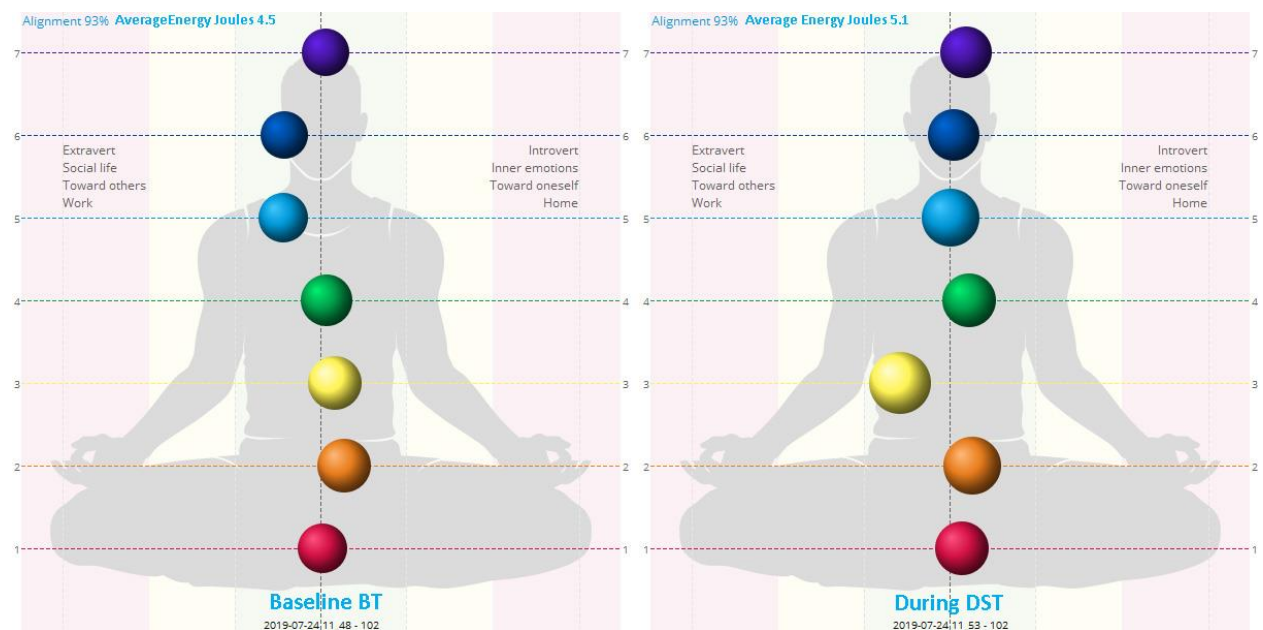


Figure 18: During touch, the subject's chakras enlarged noticeably at 8.16%, simply through DST with a horse. Chakra alignment shifted, yet remained steady at 93%.

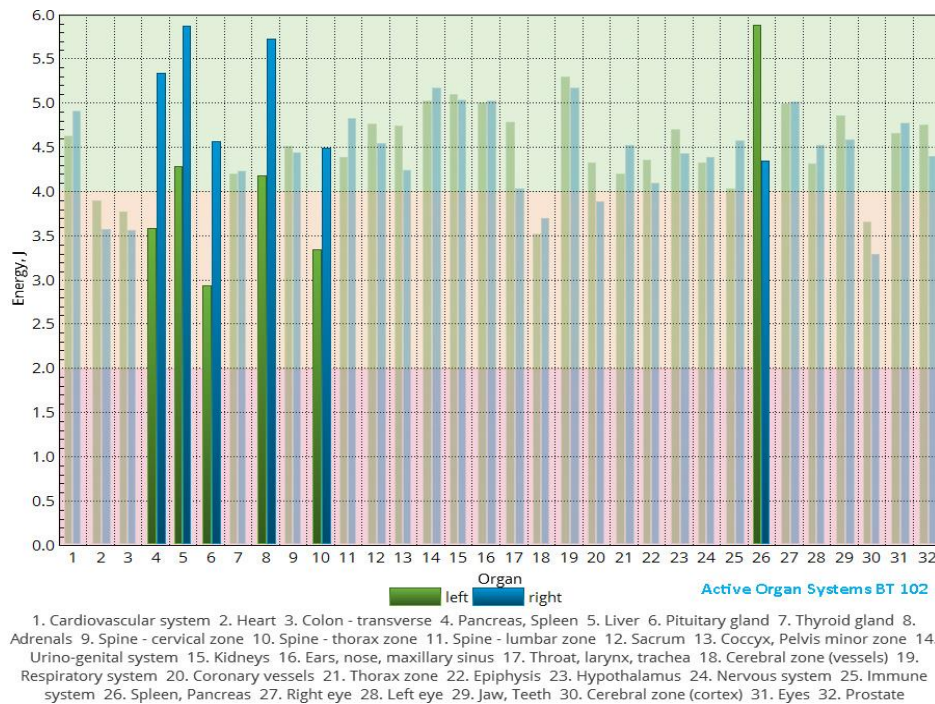


Figure 19: The subject had six imbalanced organ systems at the BT scan. This is an indication of ANS imbalance due to increased sympathetic activation.

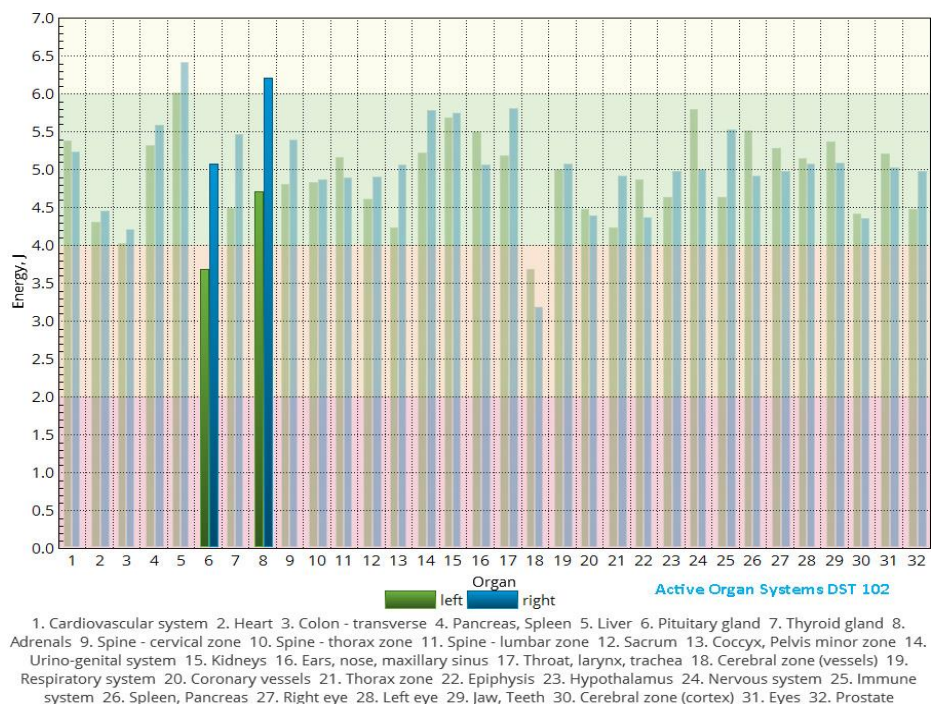


Figure 20: During DST, the subject's ANS balanced considerably, with a 67% decrease in imbalanced organ systems. This change is a result of increased parasympathetic activation/tone.

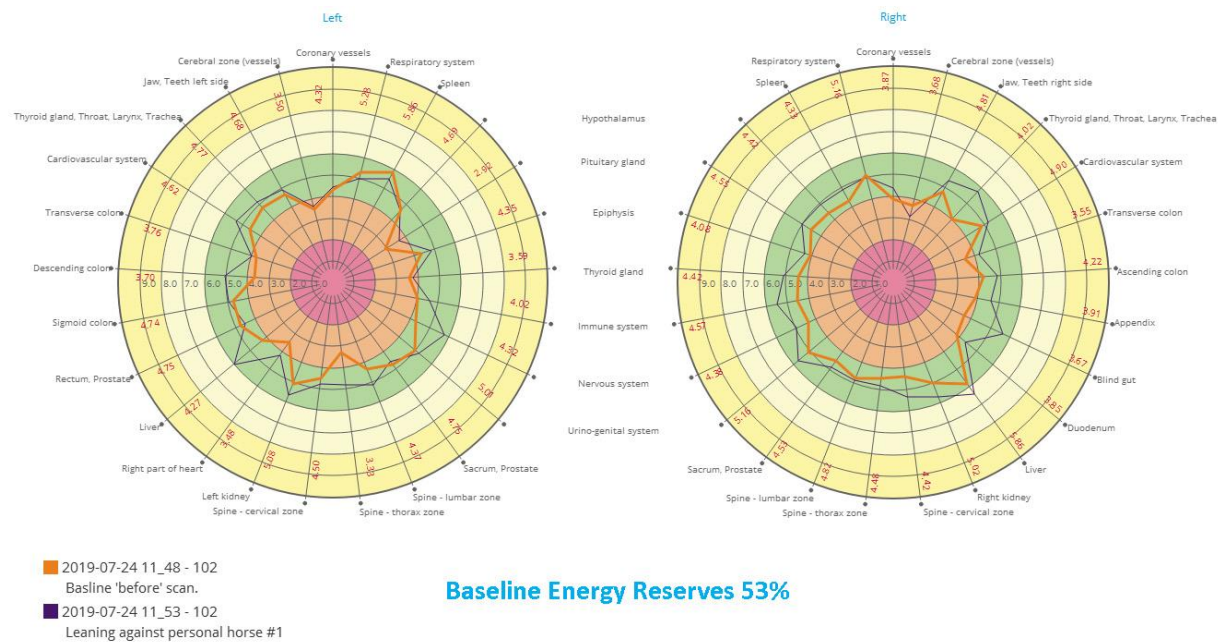


Figure 21: BT scan revealed energy reserves of 53%. However, several systems were operating insufficiently, with disturbed and decreased energy, indicated by the jagged shape of the orange line.

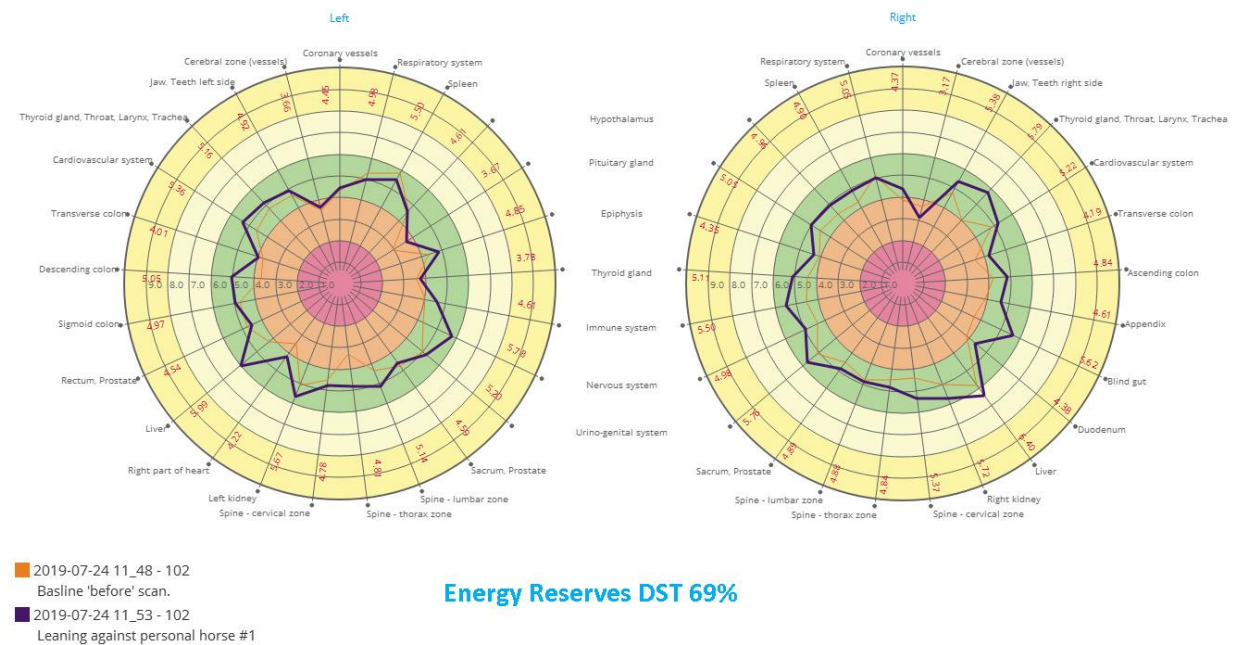


Figure 22: Upon DST with a horse, the energy diagram expanded noticeably, signaling more uniform energy availability and better distribution throughout the body. Energy reserves jumped to 69%, which is a 30% increase from the baseline scan.

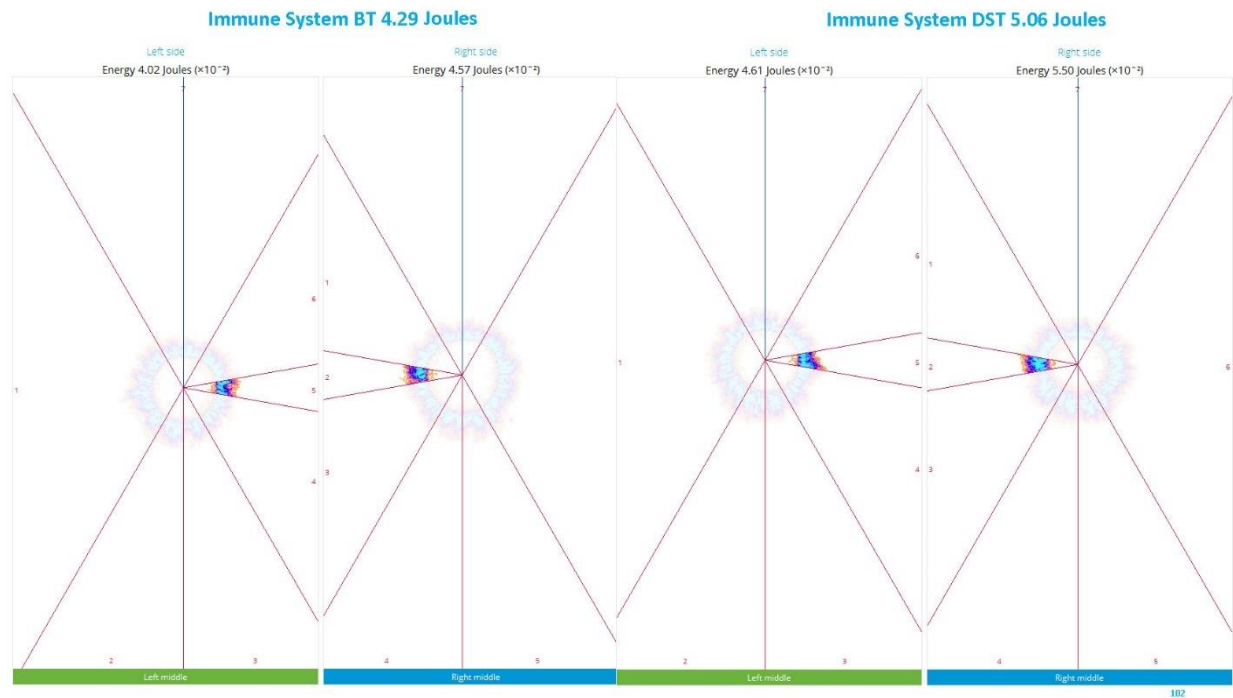


Figure 23: Energy within the immune system increased 15% from 4.29 to 5.06 Joules during DST with a known horse.

Case Report Discussion: Subject 102

The male subject, self-reported as a non-animal person, did not expect changes to occur from DST with a known horse. However, positive changes occurred in each measurement. His general energy distribution, chakras, and immunity all increased. His stress coefficient decreased. His ANS quieted with increased parasympathetic tone, and his functional energy reserves surged.

Case Report: Subject 117: Female, Adult, Dog Lover, Tested with Personal Dog

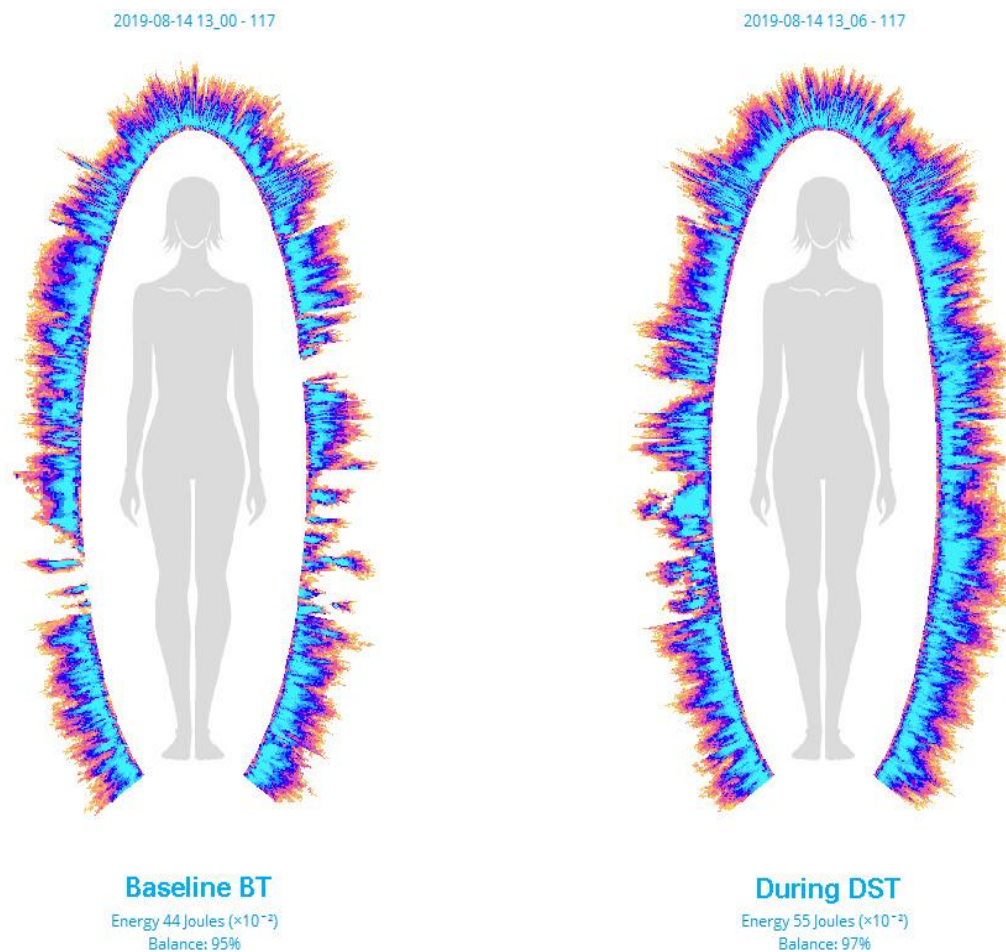


Figure 24: The BT scan reveals inconsistent and deficient energy. Numerous striations are indicative of overactivity and possible inflammation within particular systems. The gaps in her field may represent serious health issues. The subject's Energy Joules, however, increased 25% from 44 to 55 Joules from DST. Her energy field enlarged, softened, and filled in upon touch with her dog.

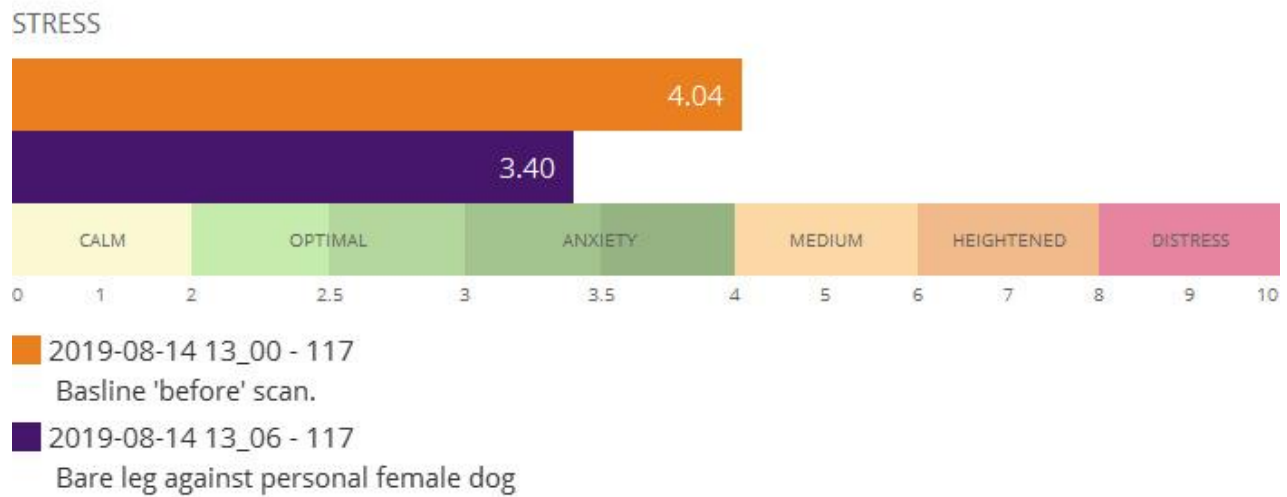


Figure 25: DST with a dog resulted in a notable 15% decrease in stress.

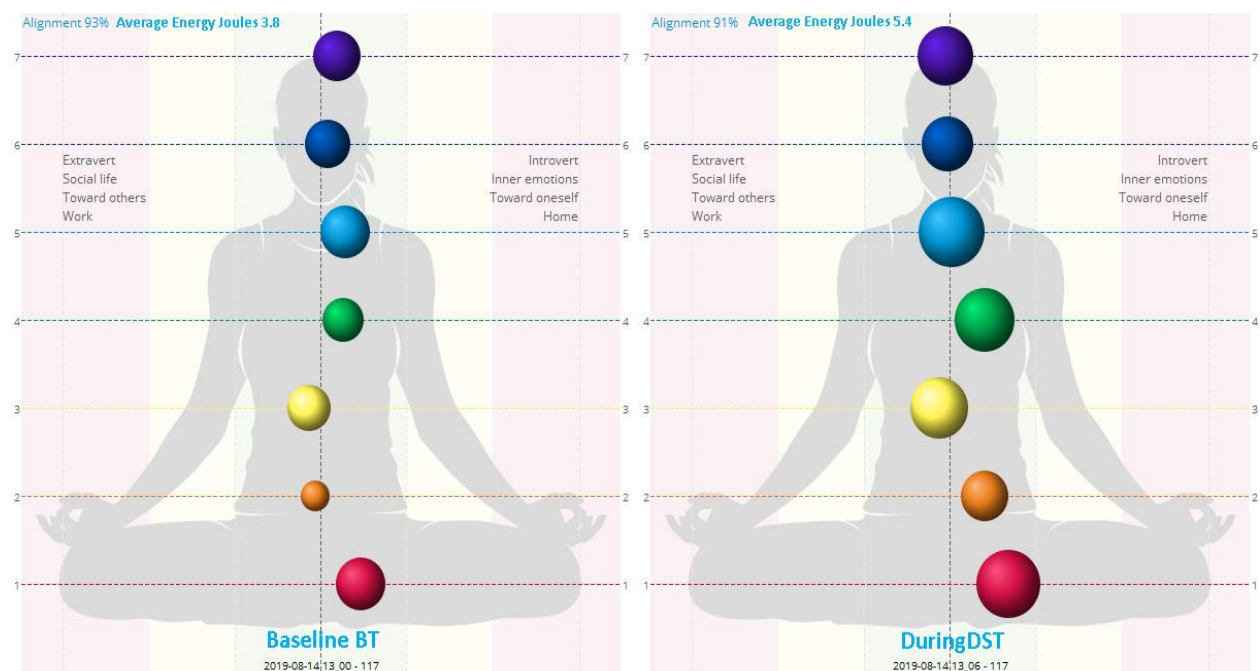


Figure 26: The subject's average chakra size increased 42% during DST with her dog. Her alignment shifted and decreased slightly.

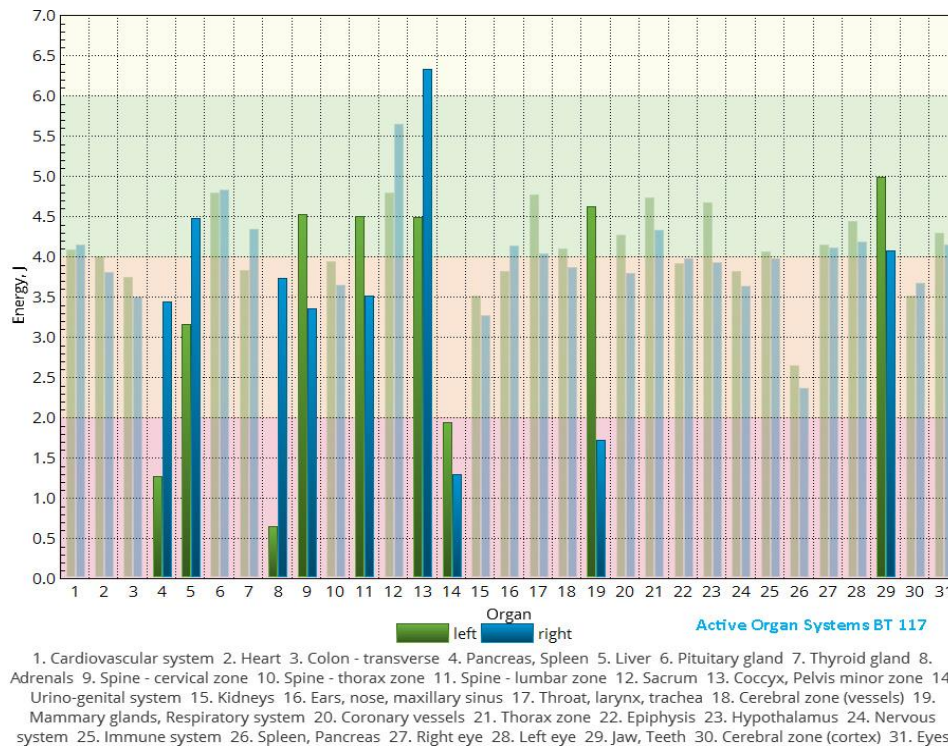


Figure 27: The subject had nine imbalanced organ systems at the BT scan. This is an indication of sympathetic reactivity within the ANS.

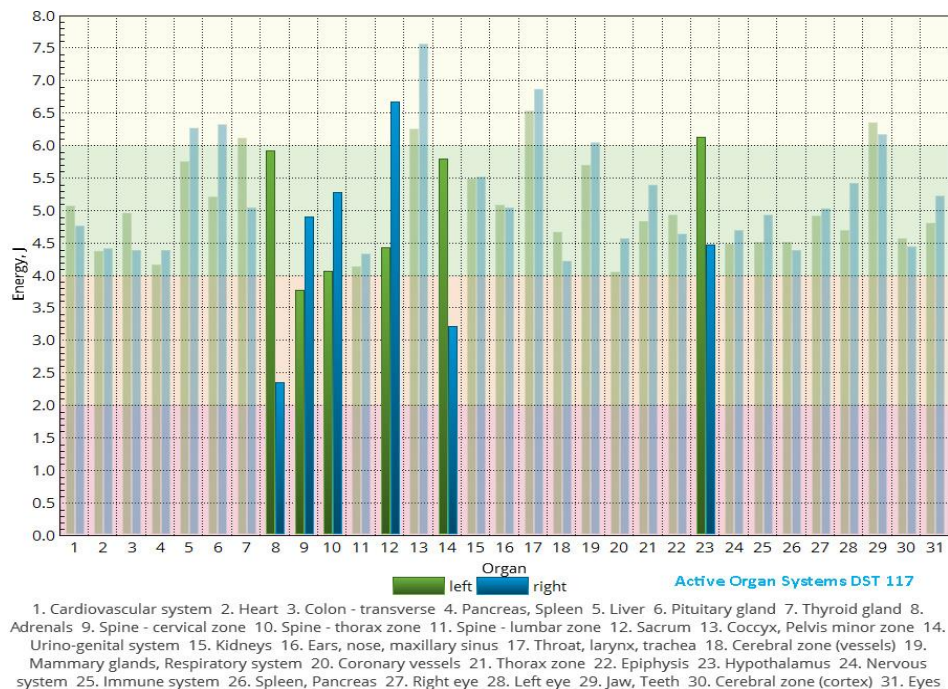


Figure 28: Direct touch with a dog helped establish better SNS/PNS balance by activating her PSN and decreasing her imbalanced organ systems to six. This is a 33% positive reduction.

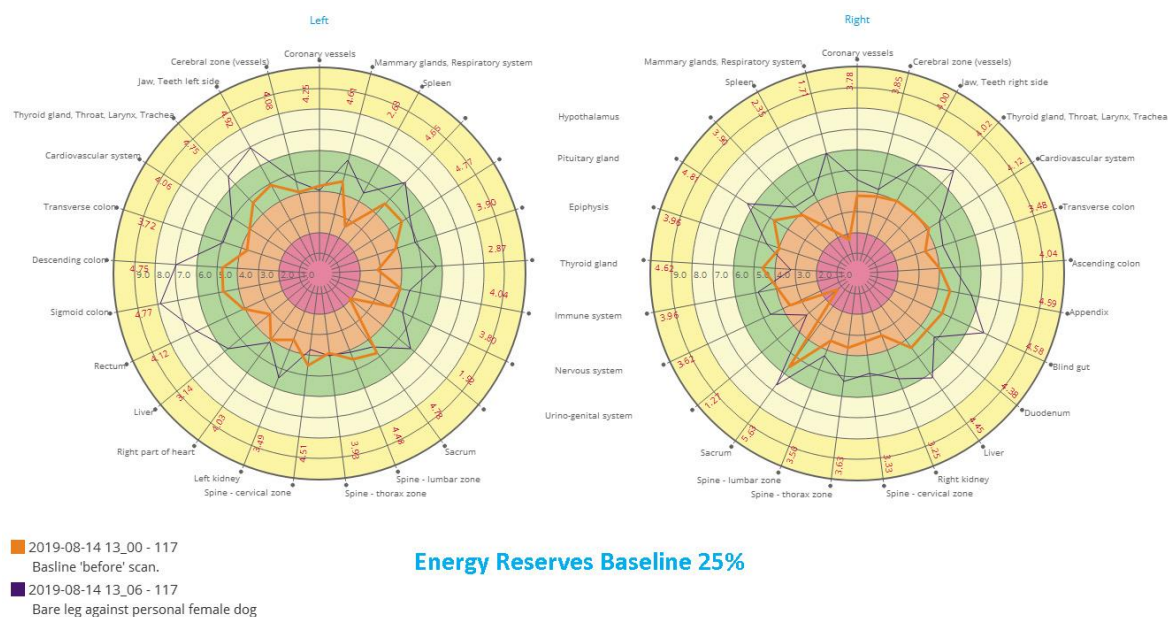


Figure 29: The subject's BT energy diagram (orange line) is tight and jagged, revealing maladaptation and probable health issues. Her energy reserves are inadequate to sustain her current state, much less heal.

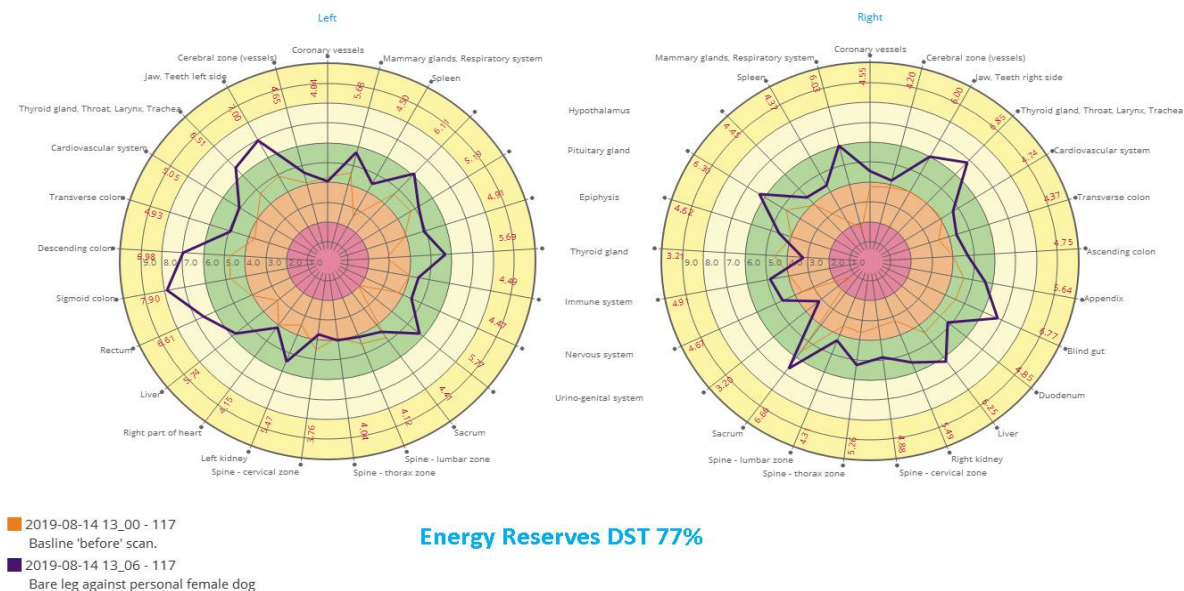


Figure 30: During DST with her dog, the subject's energy diagram expanded and softened, revealing noticeably better energy availability and distribution throughout systems. Her energy reserves jumped from 25% to 77%, representing a 208% increase.

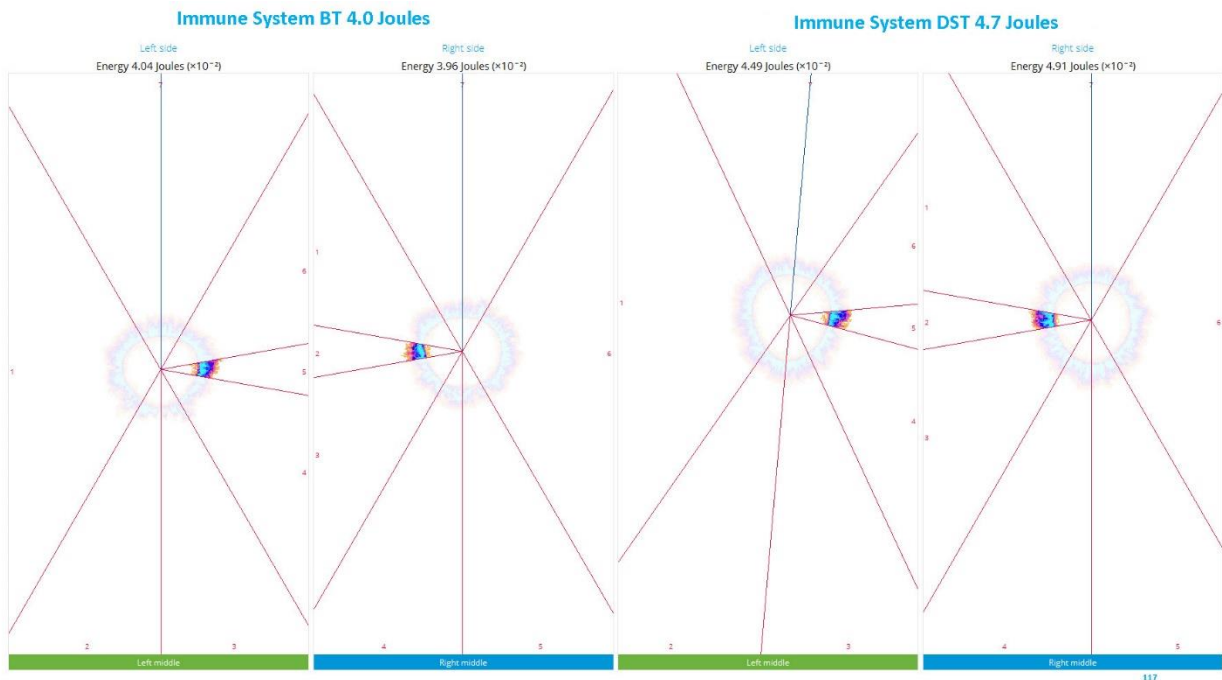


Figure 31: During DST with a dog, energy within the immune system increased from 4.0 to 4.7 Joules, or 17.5%.

Case Report Discussion: Subject 117

This adult female presented with numerous imbalances within her HES at the baseline scan. Her general energy, her chakras, and her immune system were on the low end of optimal. The gaps in her energy field correspond to the energy reserve diagram, where the orange line dips into the red center of the diagram, indicating dangerously low energy. Her sympathetic nervous system was dominant, her stress level was elevated, and she had low functional energy reserves. Upon DST with her dog, the influx of energy was unmistakable. The donation of energy improved her psychophysiology immediately: it increased her general energy distribution and balance, the size of her chakras and energy reserves, and boosted her immune system. Her stress level decreased notably, as did her organ system imbalance. Her energy diagram softened and expanded.

Case Report: Subject 101: Female, Adult, Animal Lover, Tested with Personal Dog

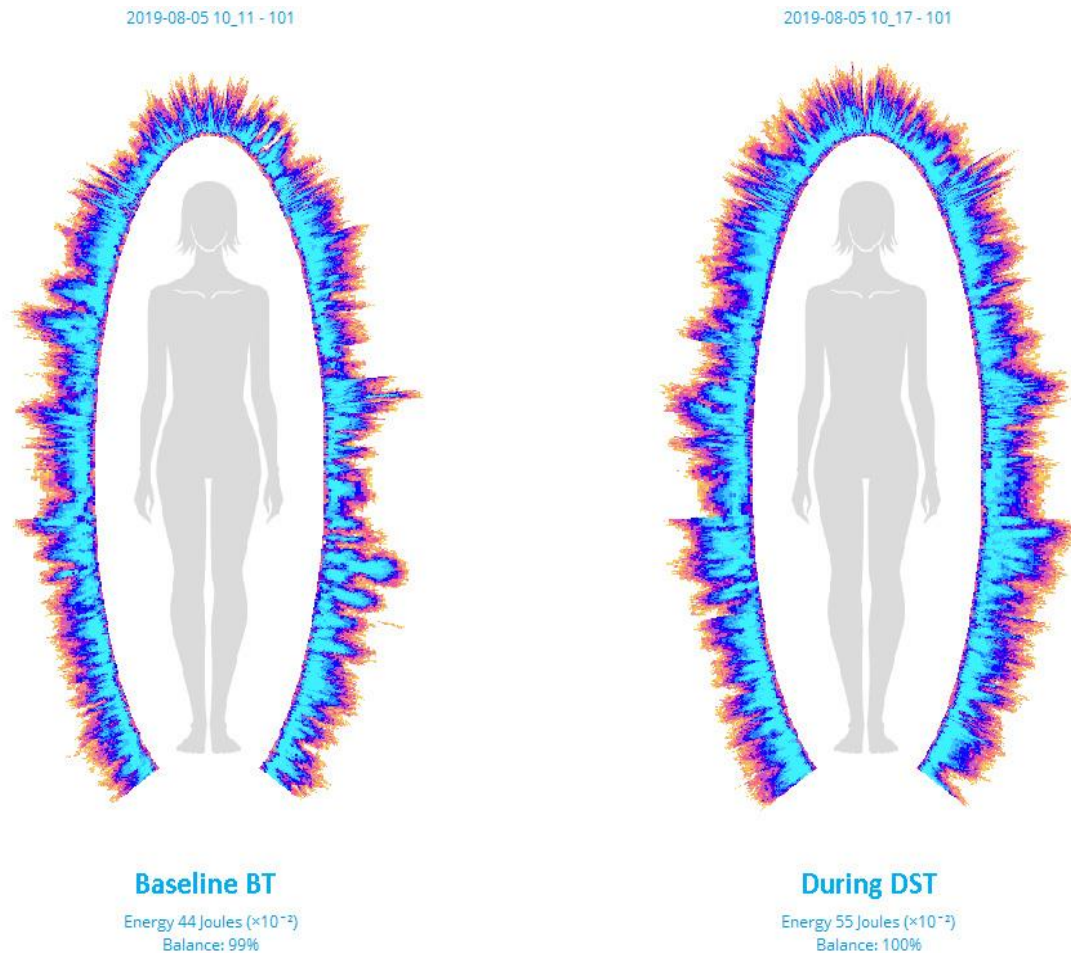


Figure 32: The baseline scan for this subject is narrow and reveals both flares and break-through areas. This is indicative of inconsistent energy or health issues. Her energy distribution is at the low end of normal. Upon DST with her personal dog, her energy in Joules ($\times 10^{-2}$) increased by 25%. As a result, her energy field expanded, softened, and filled in.

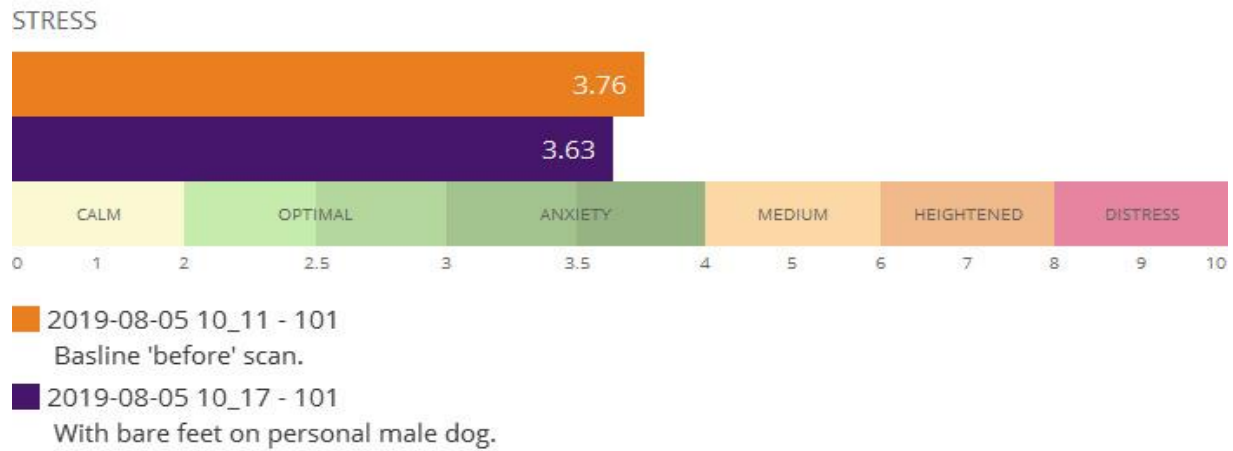


Figure 33. DST with a dog provided an immediate 3.46% reduction in stress.

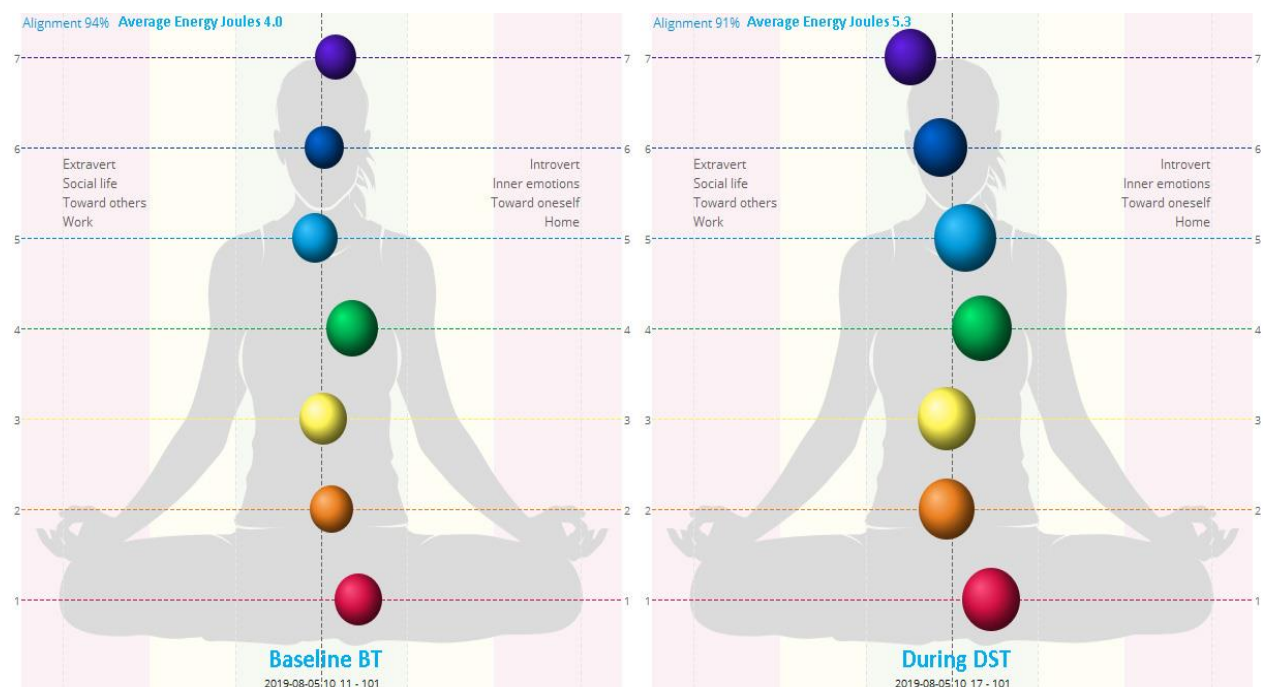


Figure 34: The subject's BT scan shows undersized chakras. Average chakra size enlarged by 32.5% upon DST with her dog. Her alignment decreased slightly.

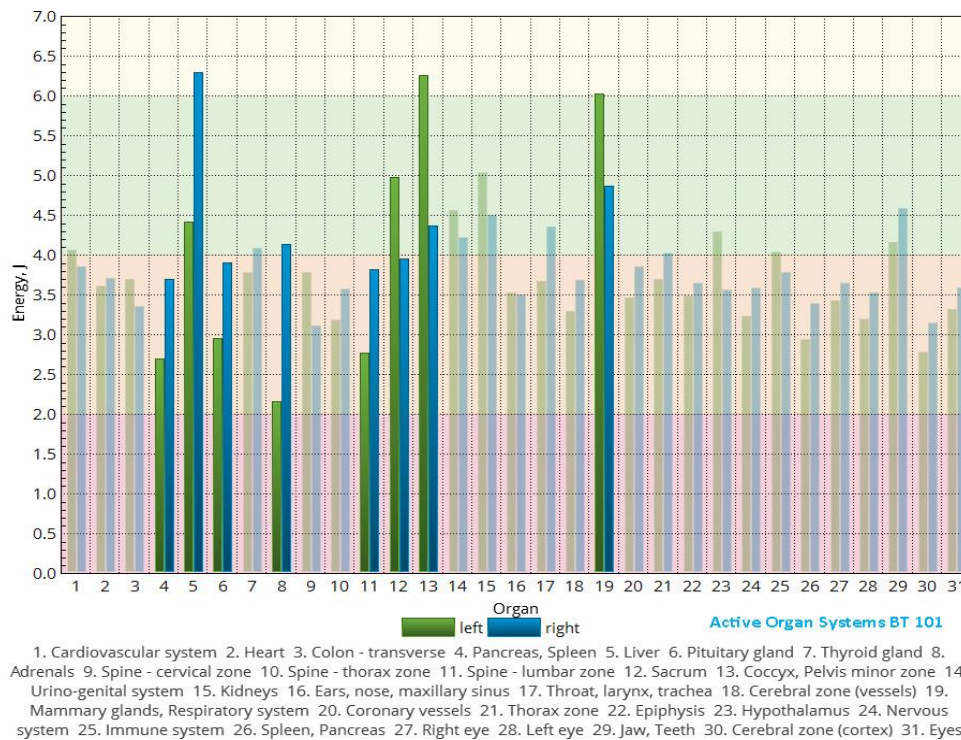


Figure 35: The baseline scan reveals 8 imbalanced organ system. This suggests an imbalance in the ANS with heightened SNS tone.

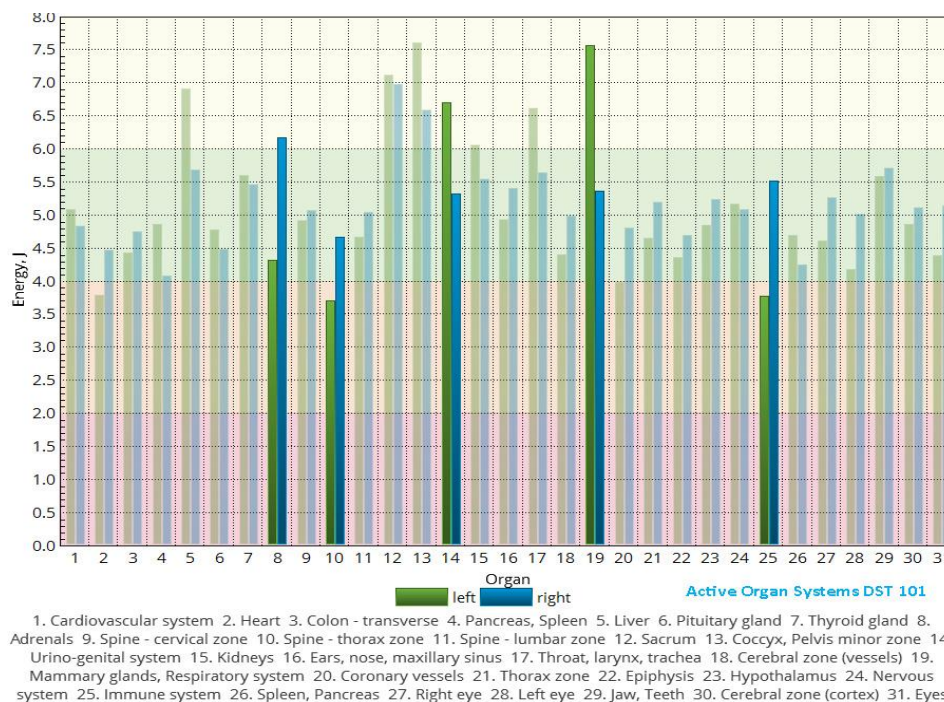


Figure 36. DST with a dog immediately facilitated better balance within this subject's ANS, as is indicated with the reduction from eight to five imbalanced organ systems.

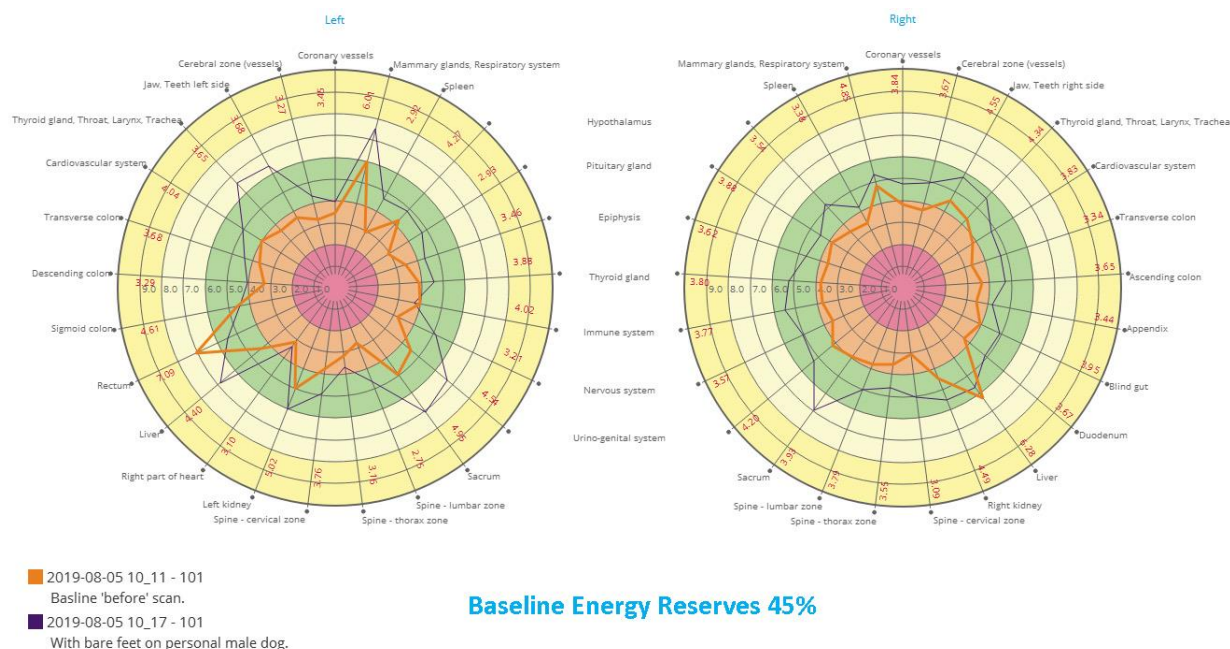


Figure 37. The BT scan revealed energy reserves of 45%. The irregular shape of the energy diagram on the left, and the noticeable differences between the left and right diagrams (orange lines), expose maladaptation and insufficient energy between specific systems.

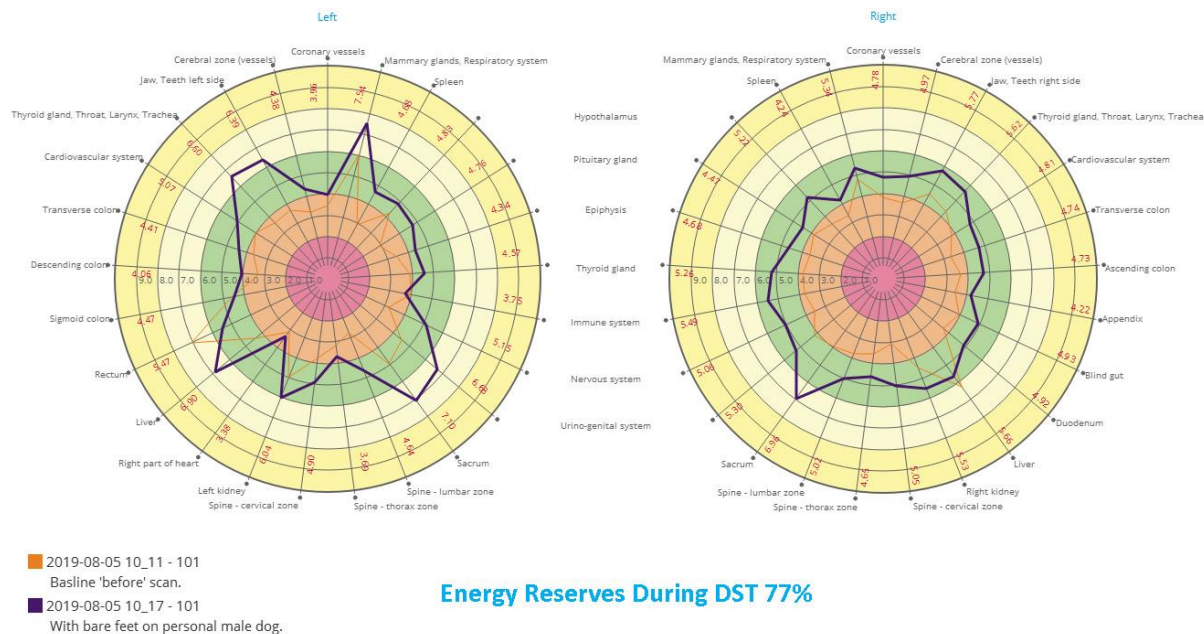


Figure 38. During DST, energy reserves increased to 77%, which is an increase of 71.1%. The energy diagram enlarged and softened, indicating better energy availability and distribution.

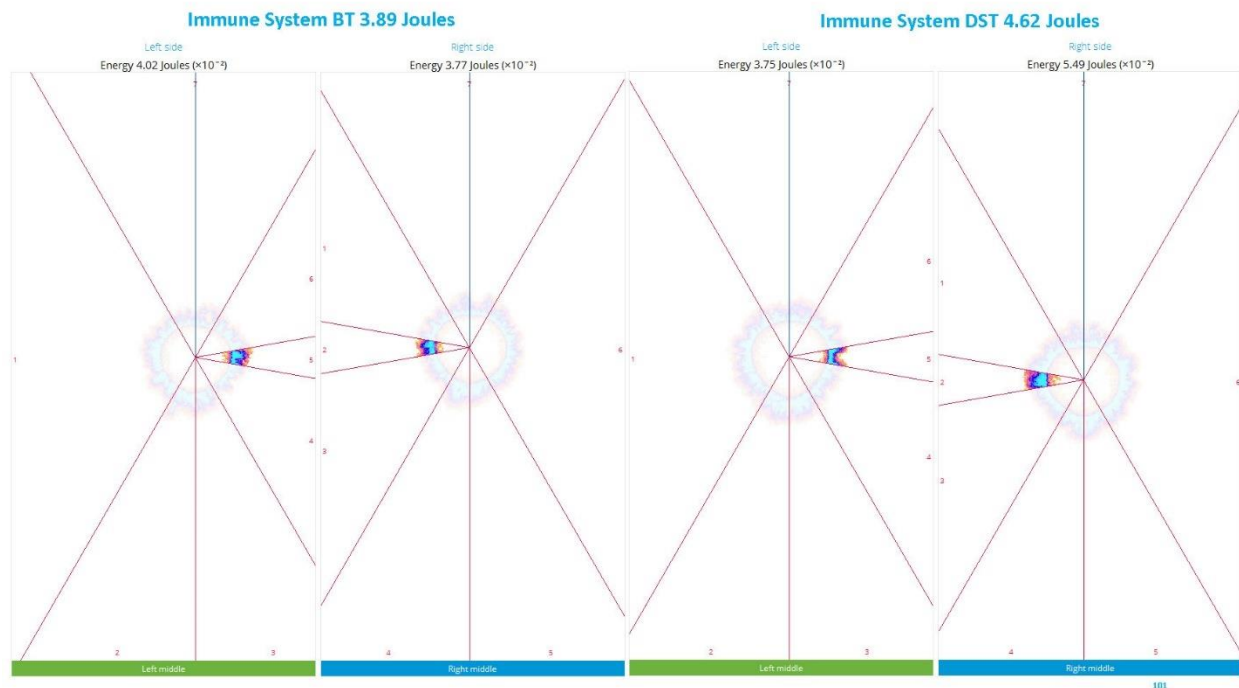


Figure 39: Average energy within the immune system increased 18.77% as a result of DST with her personal dog.

Case Report Discussion: Subject 101

DST with her personal dog provided this subject with beneficial alterations to all six variables. The meaningful increase in her energy field Joules ($\times 10^{-2}$) puts her into a higher functioning range by giving her body additional fuel. This is clearly reflected in her chakras, as well. Balance increased within her energy field, but decreased slightly within chakra alignment, which can happen with an influx of energy. Her energy field filled in and softened, as indicated by more bright blue and less dark blue striations. The subject showed a decrease in both stress and ANS activity. Energy reserves and immune system energy improved.

Case Report: Subject 120: Male, Adult, Animal Lover, Tested with Personal Dog

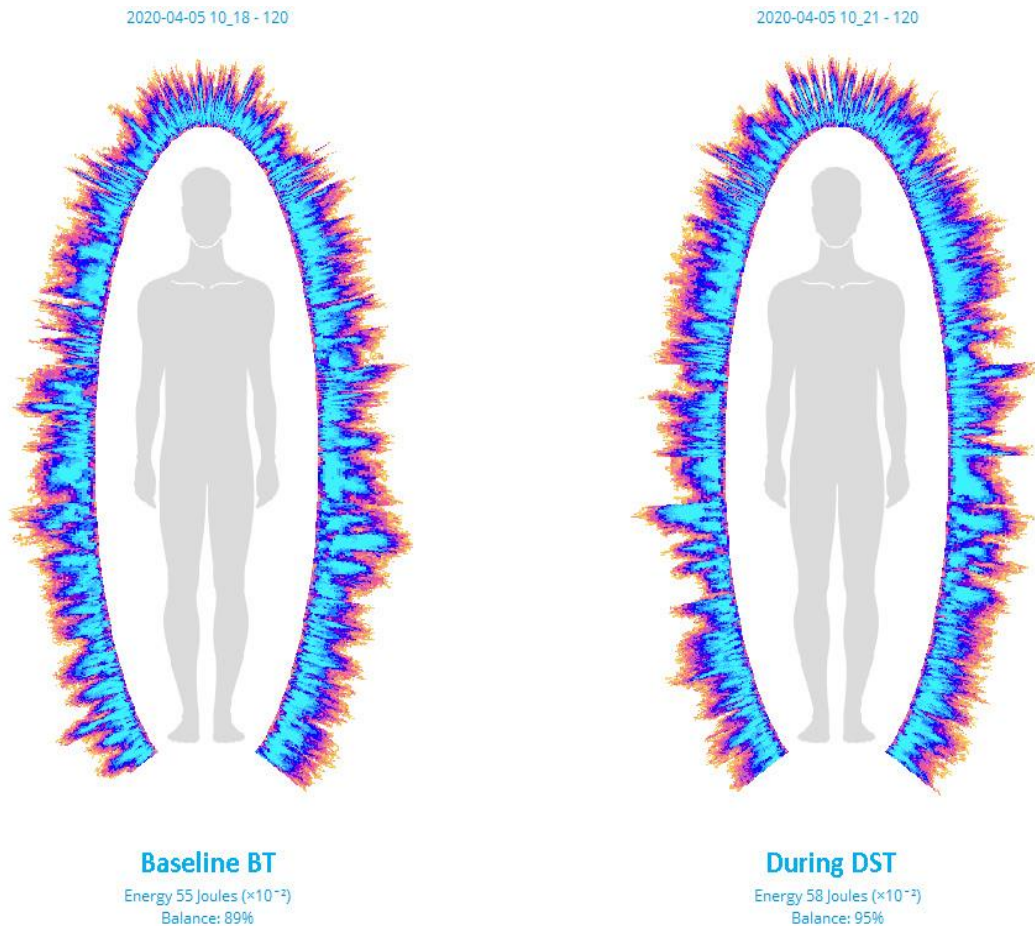


Figure 40. The subject's BT scan shows fairly heavy striations, with some patchy areas. This reveals less than optimal functioning, and inconsistent energy availability and distribution. His energy increased from 55 to 58 Joules ($\times 10^{-2}$) during DST, and the subject's field enlarged and filled in as a result of decreased striations.

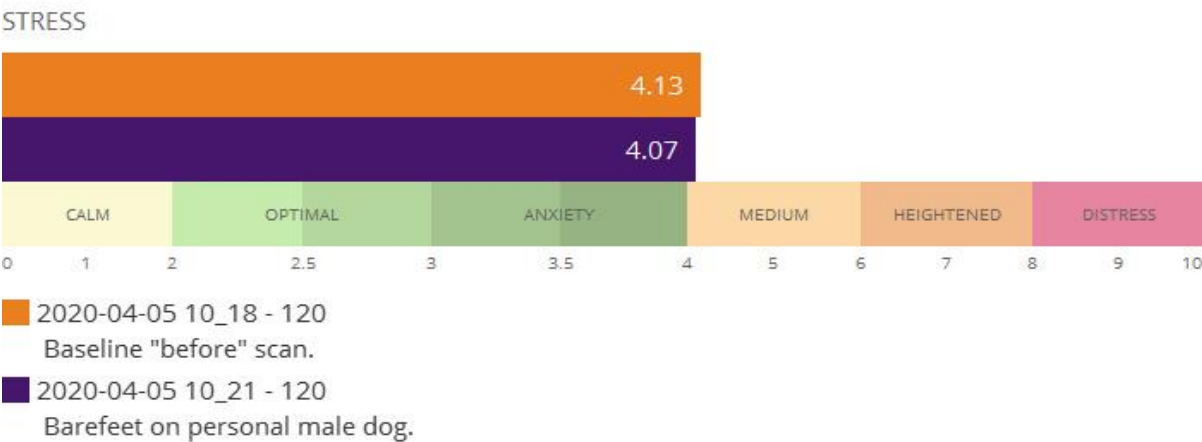


Figure 41: DST with a known dog provided 1.45% reduction in stress.

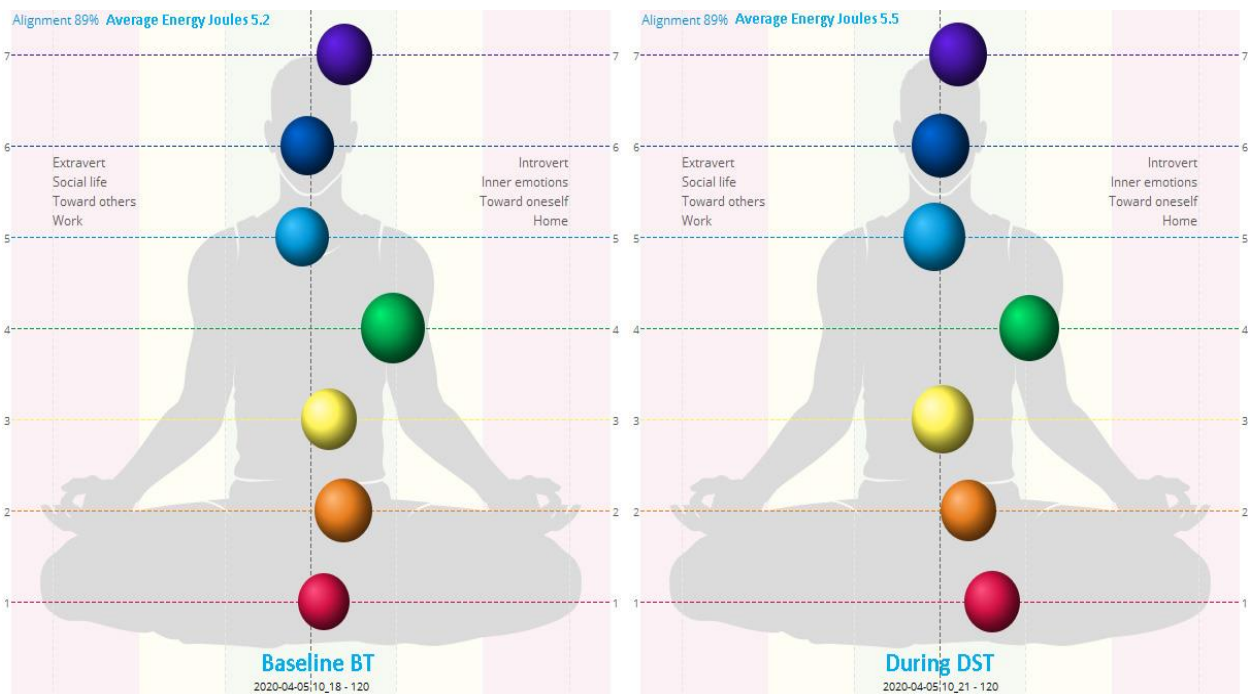


Figure 42. During DST, the subject's average chakra size increased 5.77%, and his alignment remained steady at 89%.

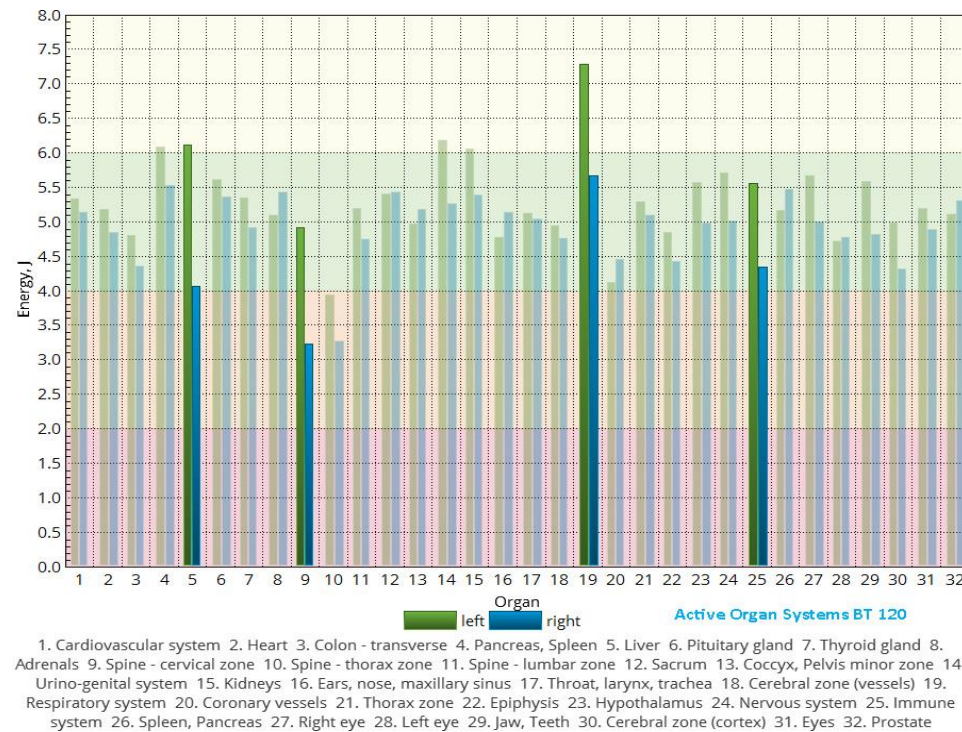


Figure 43. This subject had four imbalanced organ systems at the BT scan.

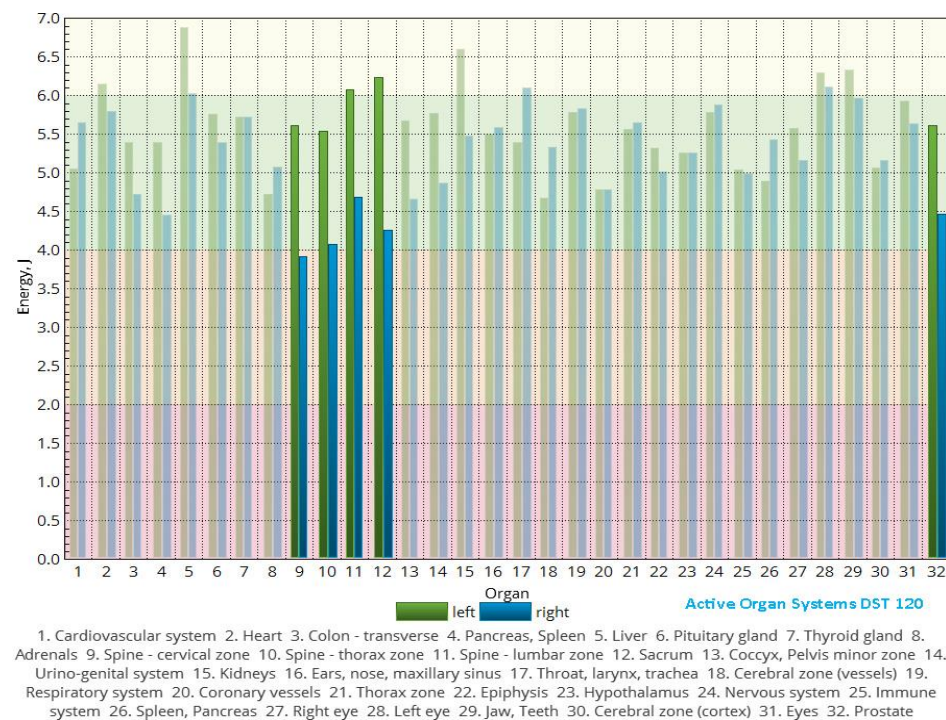


Figure 44. This subject's organ imbalance shifted and increased by one, upon DST with his personal dog.

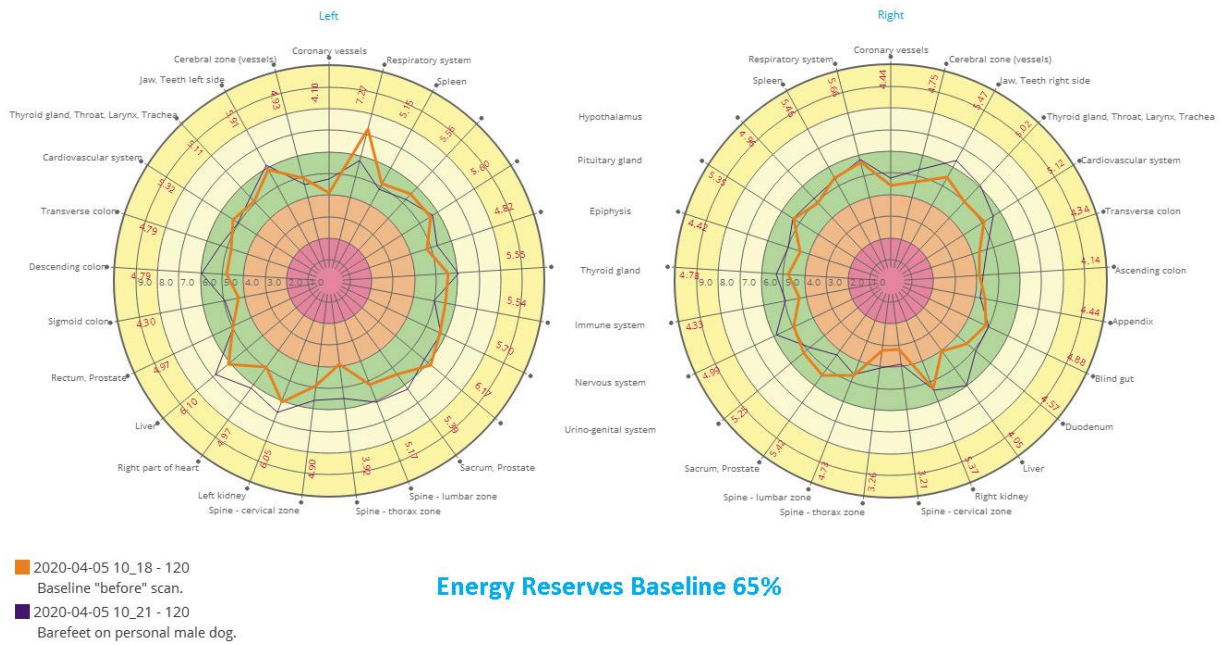


Figure 45. The BT scan showed adequate energy reserves of 65%. The subject's generally smooth energy diagram shows fairly consistent energy throughout systems.

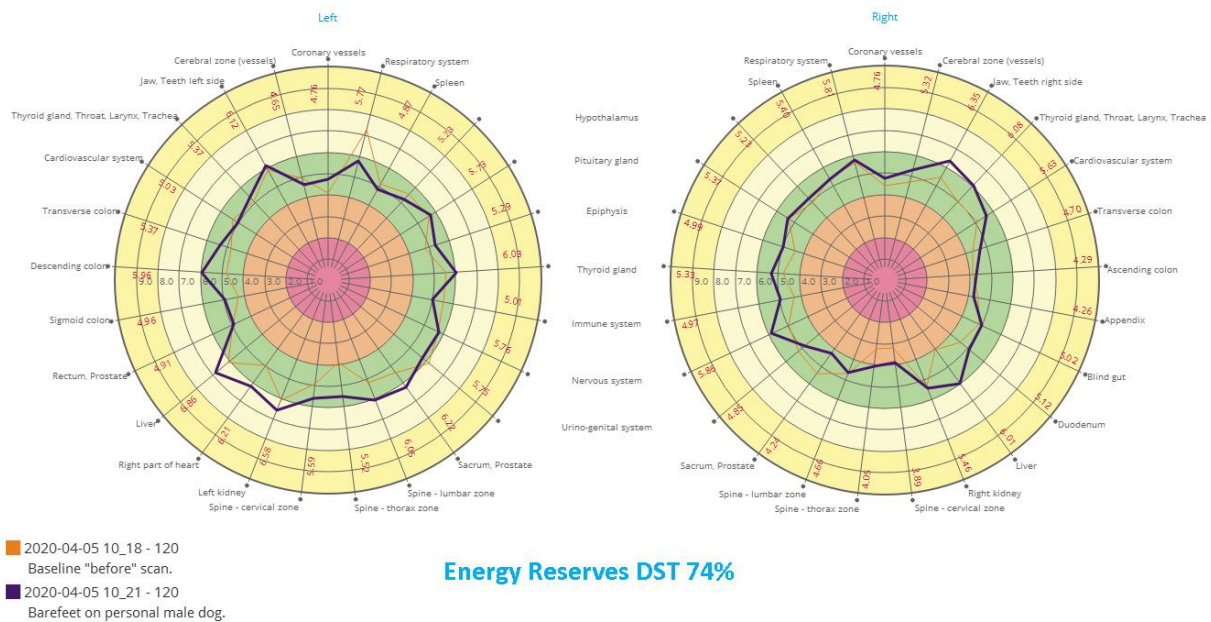


Figure 46. Upon DST, energy reserves increased by 12%, and the energy diagram softened even further.

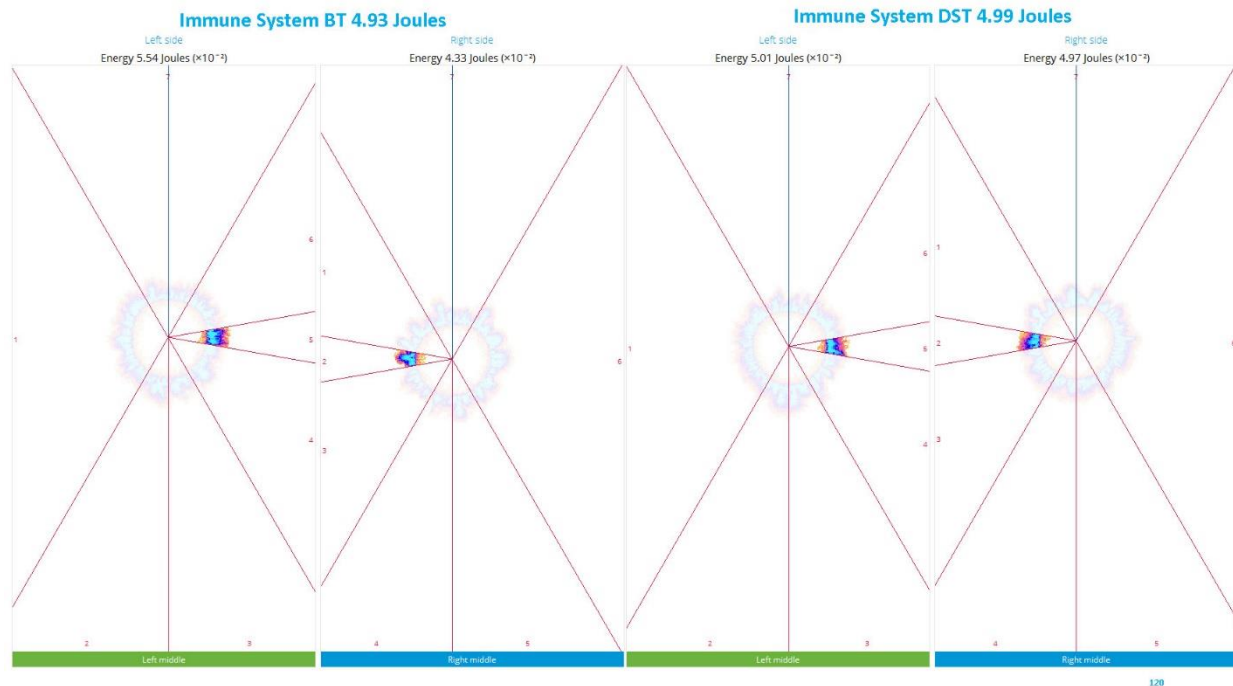


Figure 47: Energy within the immune system showed an immediate increase of 1.2% during DST with a known dog.

Case Report Discussion: Subject 120

This adult male had sufficient energy at the baseline scan, but his energy field showed signs of maladaptation. The additional energy provided by DST with a dog allowed his energy field to soften and fill in, while increasing his balance. (A softer field, with few dark striations is desirable, as it indicates more healthful functioning.) His chakra size was acceptable at BT, but moved even further into optimal range with DST. His organ system imbalance actually increased by one during DST; however, this scan was taken on a hard floor with bare feet against his dog, and the subject was complaining that the process was irritating his back. Interestingly, the organ systems that activated during DST, were all related to the low back. The subject's energy reserves increased, as did immune system energy during DST.

Case Report: Subject 108: Female, Adult, Non-Animal Person, Tested with Unfamiliar Dog

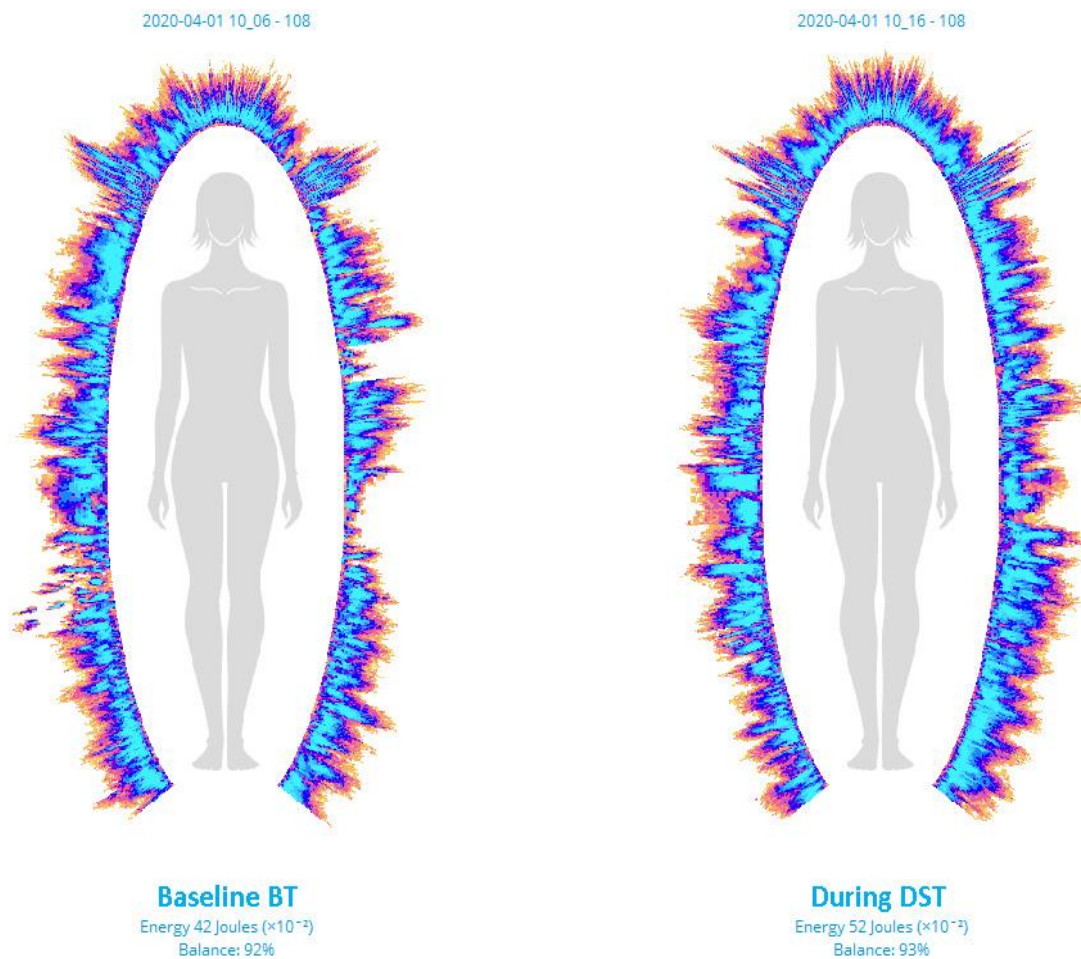


Figure 48. This female subject has obvious deficiencies within her energy field. This is indicated by multiple deviations including gaps, flares, and dark striations. She likely has several health issues, and her BT energy level is at the low end. Upon DST with an unfamiliar dog, her energy Joules ($\times 10^{-2}$) increased by 19%. This allowed her field to enlarge, fill in, and soften.

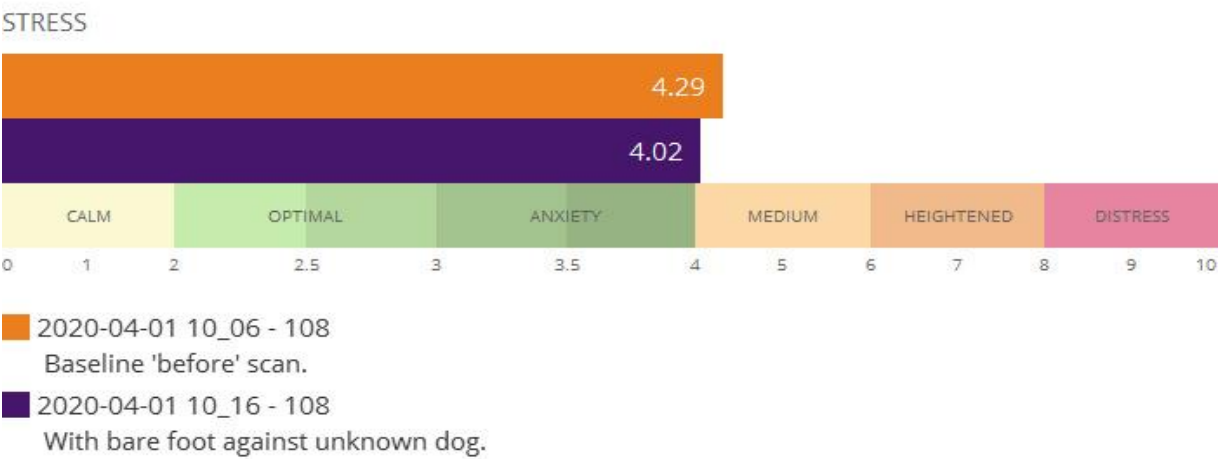


Figure 49: DST with an unfamiliar dog provided an immediate 6.29% in stress.

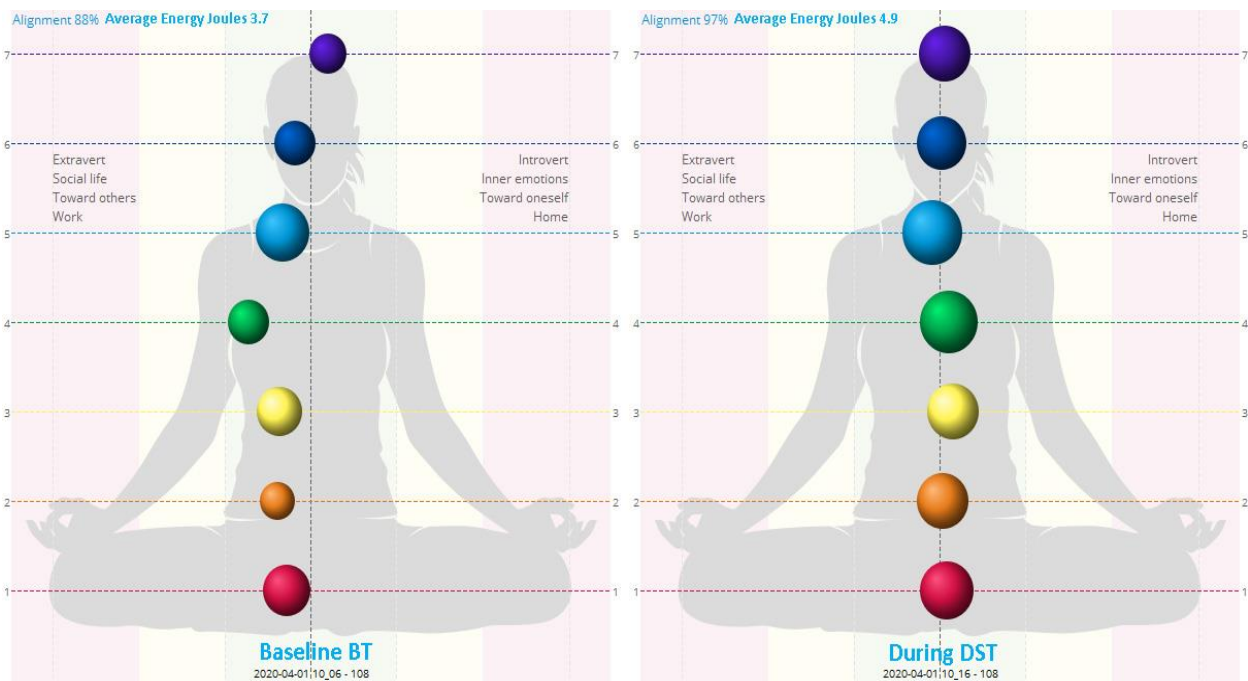


Figure 50. This subject's BT scan showed undersized chakras. Her average chakra size increased 32.43% during DST with an animal, and alignment increased by 10%.

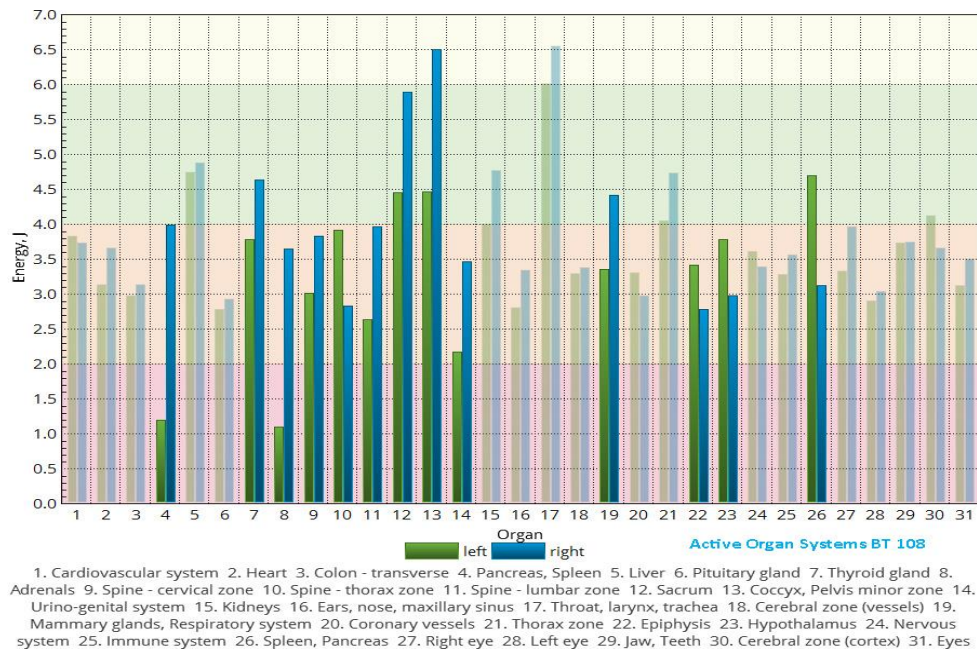


Figure 51. This subject's ANS reveals SNS dominance at the baseline scan, with thirteen imbalanced organ systems.

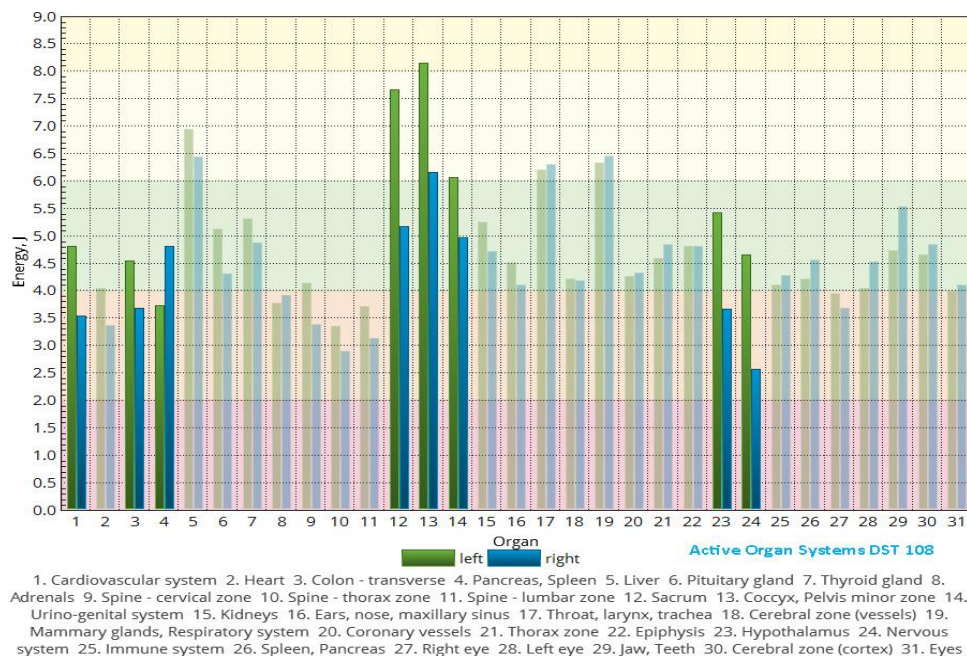


Figure 52. Despite eight remaining imbalance organ system, this subject's ANS came into much better balance during DST. Organ system imbalance was reduced by 46%, as the PNS activated.

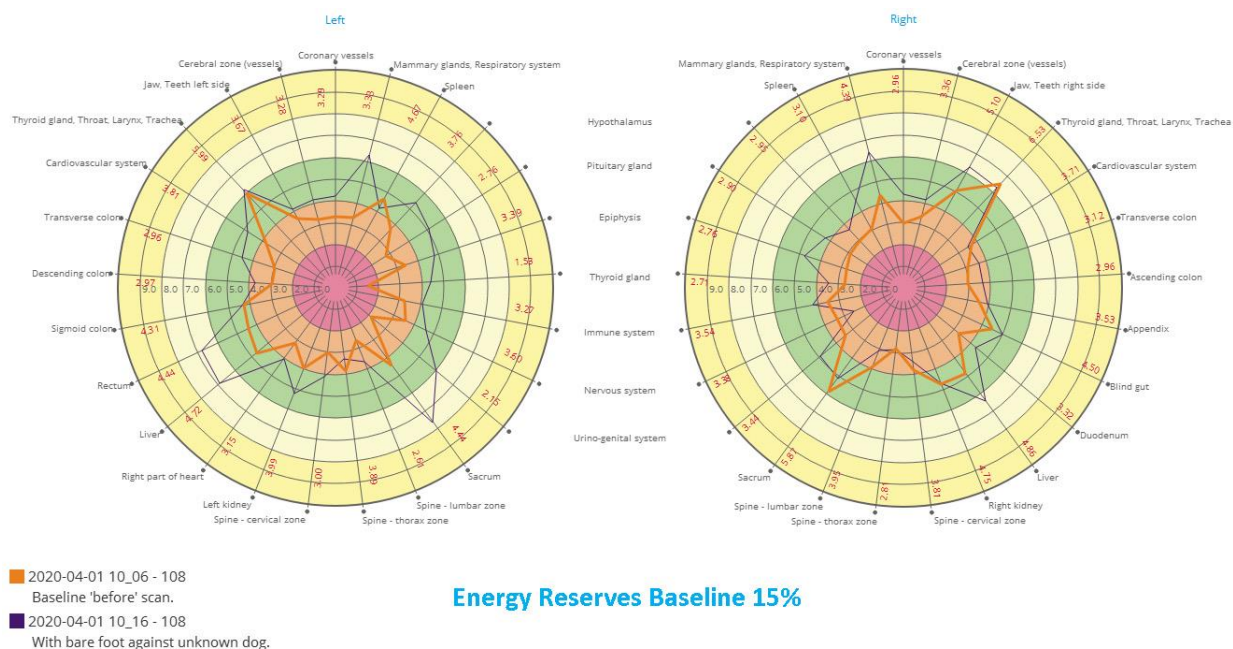


Figure 53. The BT energy diagram is extremely jagged, and fairly tight. This indicates sub-optimal, inconsistent functioning in numerous systems. Energy reserves are very low at only 15%.

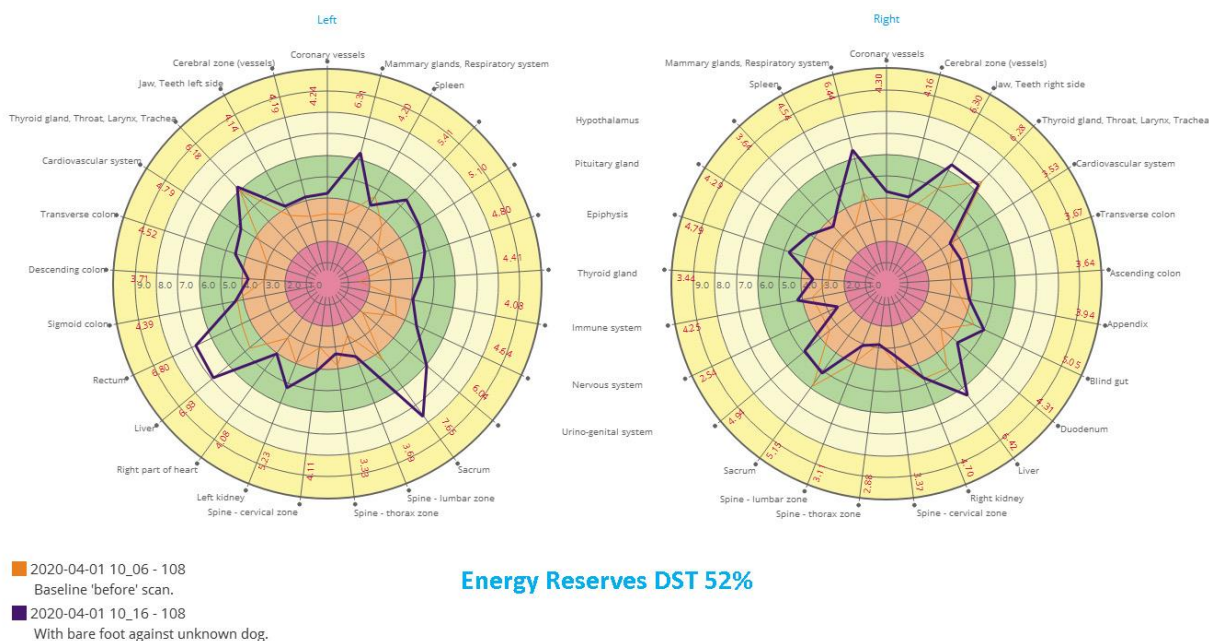


Figure 54. Upon DST with an unfamiliar dog, the subject's energy reserves jumped to 52%. This represents an increase of 71%. Her energy diagram is less irregular in shape, indicating better distribution.

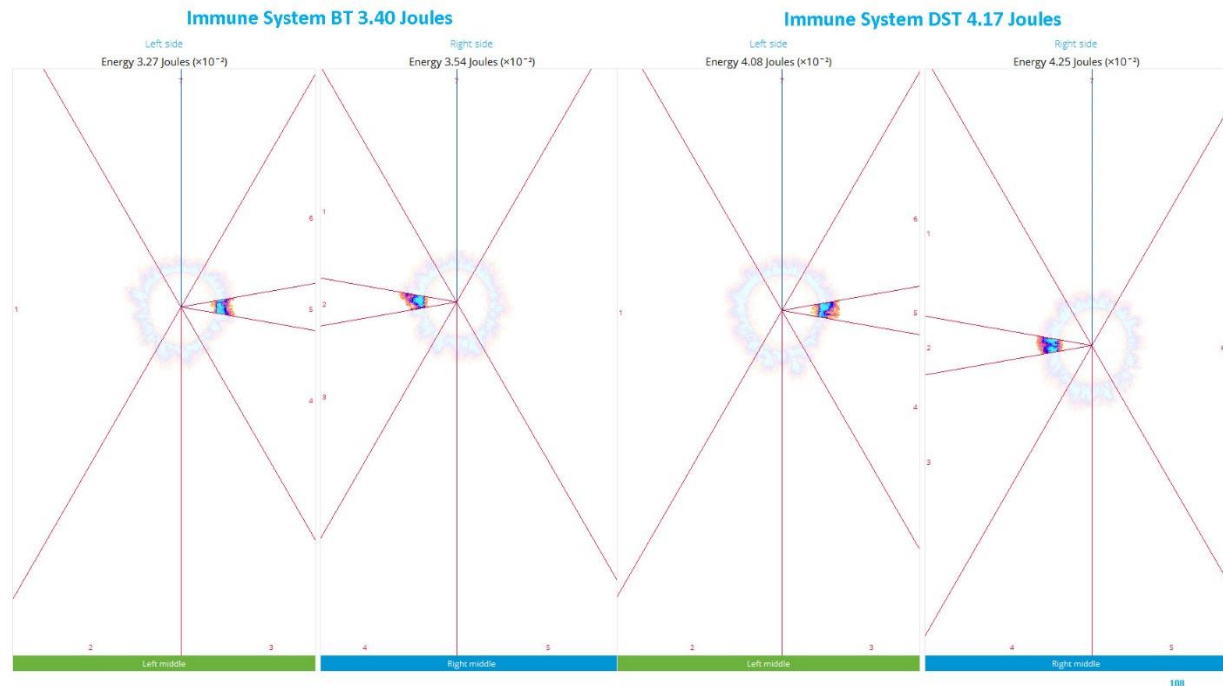


Figure 55. Energy within the immune system increased from 3.40 to 4.17 Joules (10^{-2}), or 22.65%.

Case Report Discussion: Subject 108

This subject has numerous imbalances within her HES. Her BT scan revealed low energy and poor distribution within her energy field. Her chakras were very small and her energy diagrams were tight and jagged, further verifying insufficient energy. Upon DST with an unfamiliar dog, her energy immediately increased over 19%. Her stress was reduced, and her ANS was put into better balance by allowing her PNS to activate. Her energy reserves at baseline were very low, and jumped by 71% upon DST. Energy within her immune system was greatly improved, as well. Sufficient energy reserves and immune system efficiency are important for a person with a notably irregular energy diagrams and energy deficiencies, which are indicative of current health issues.

Case Report: Subject 104: Adult, Female, Animal Lover, Tested with Personal Horse

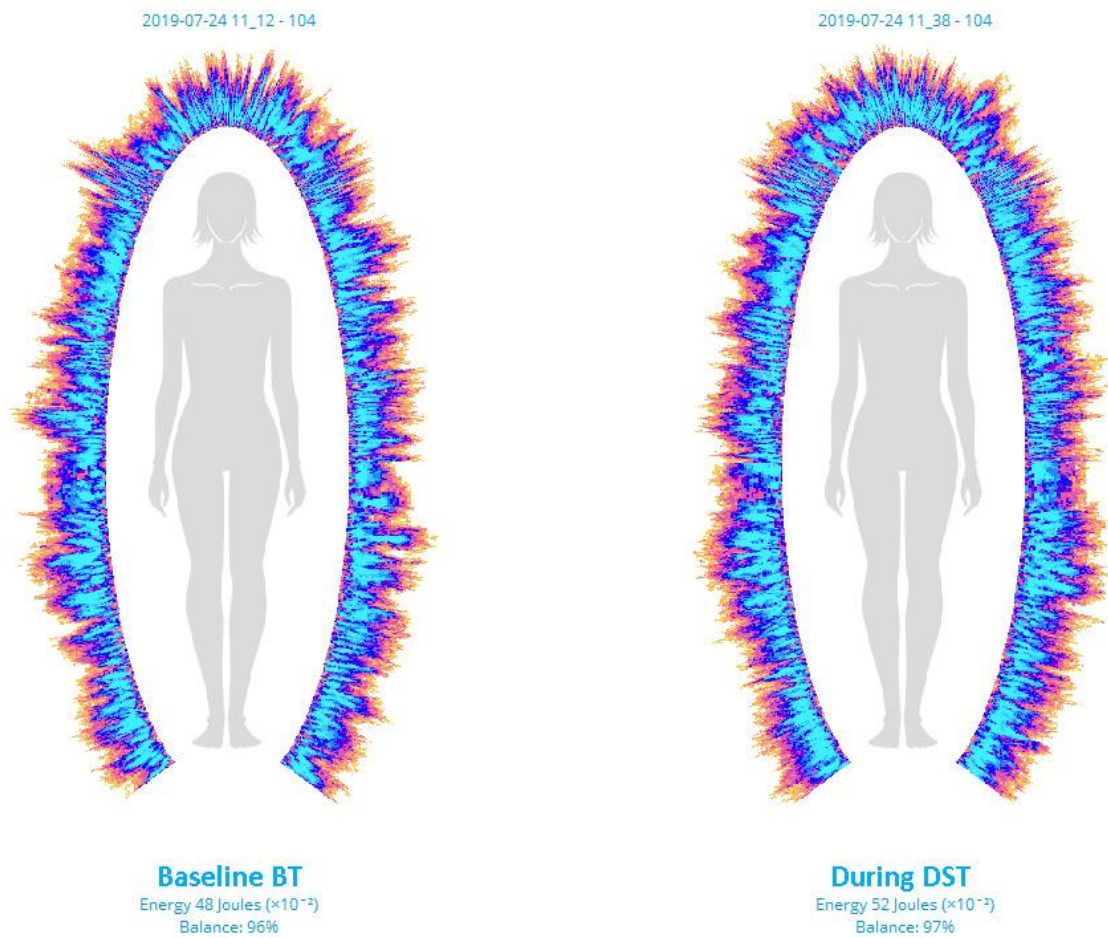


Figure 56. The BT scan reveals heavy striations amidst an uneven field. Her energy Joules ($\times 10^{-2}$) were on the low end for a woman under age 40. Upon DST with her personal horse, the subject's energy increased from 48 to 52. Her energy field filled in and enlarged.

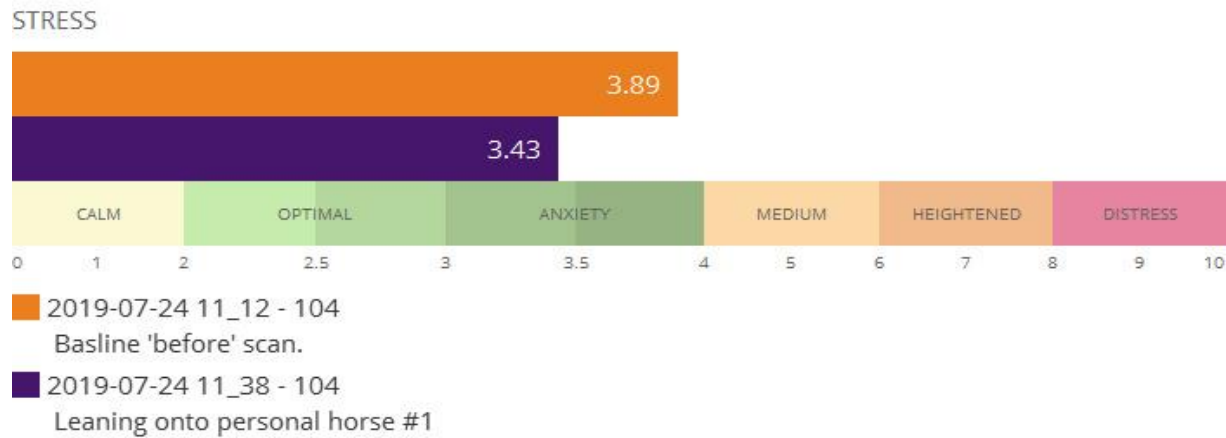


Figure 57. DST with a known horse provided an immediate 11.83% decrease in stress.

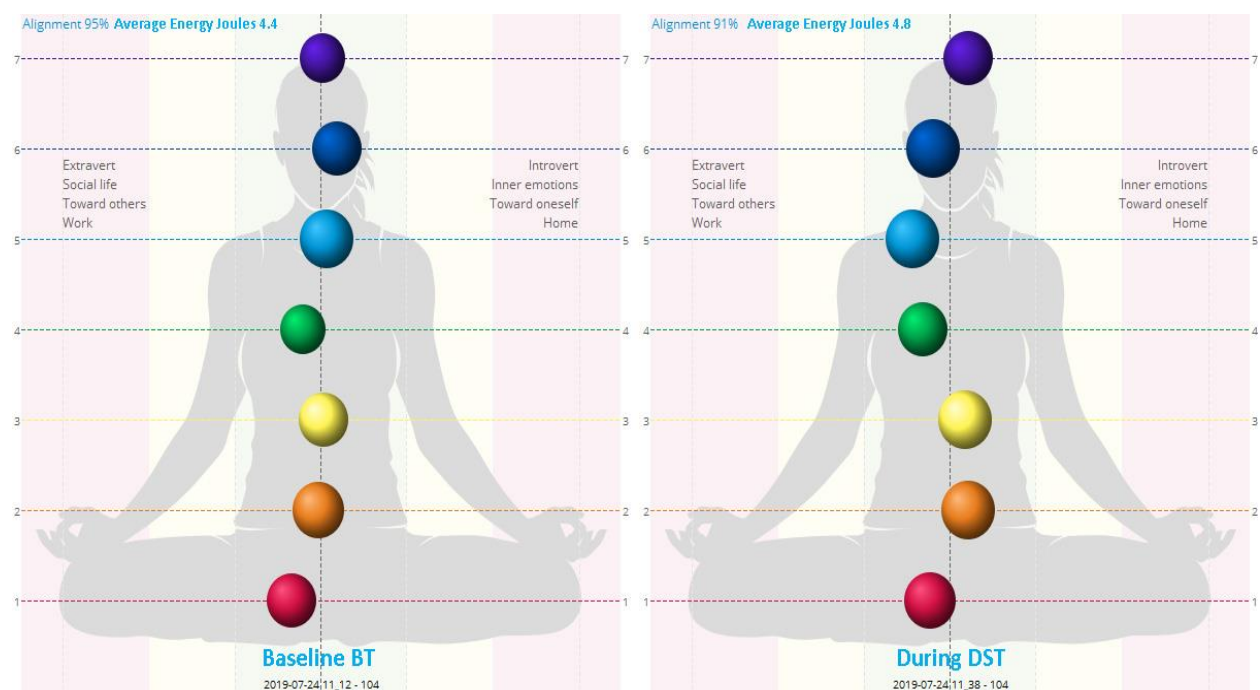


Figure 58. Average energy within the chakras, increased by 9.09% as a result of DST with a horse. Her alignment shifted and decreased slightly.

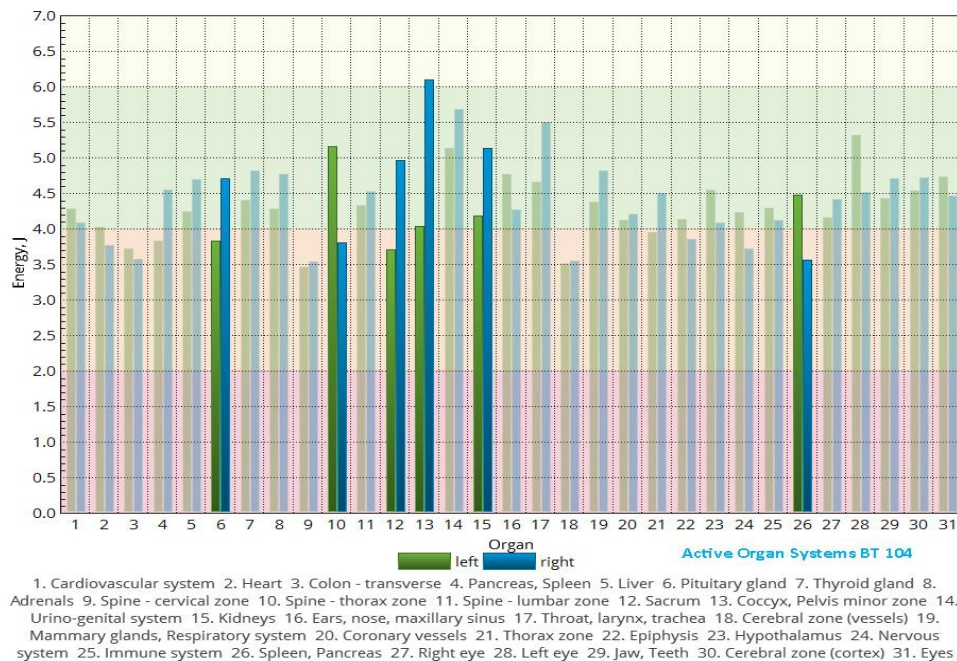


Figure 59. The BT scan revealed six imbalanced organ systems, indicative of increased SNS tone.

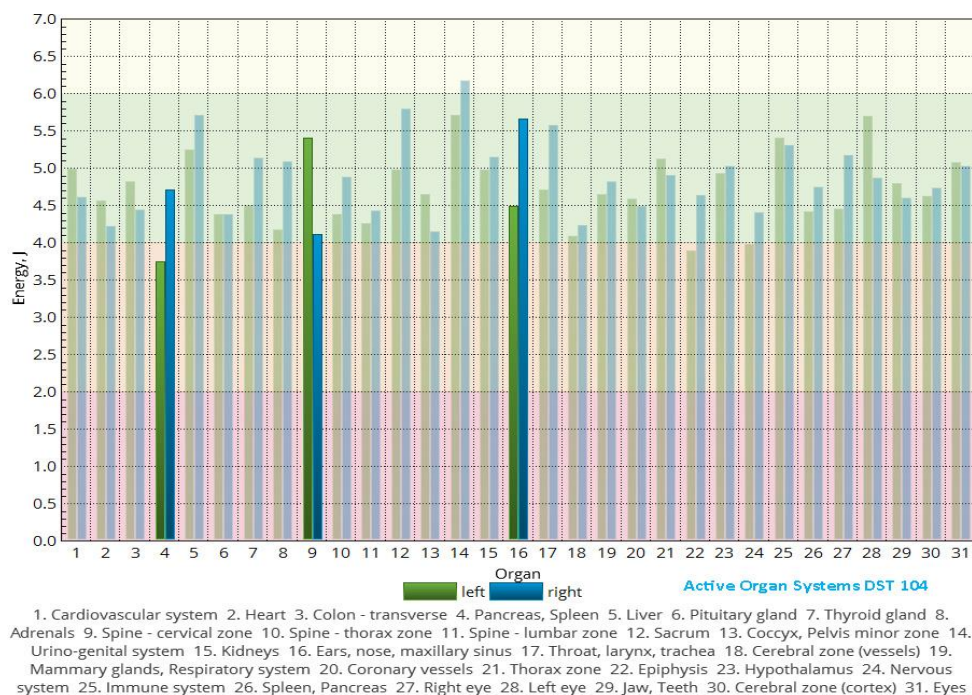


Figure 60. Upon DST with a horse, PNS tone increased, positively reducing the number of imbalanced organ systems to three.

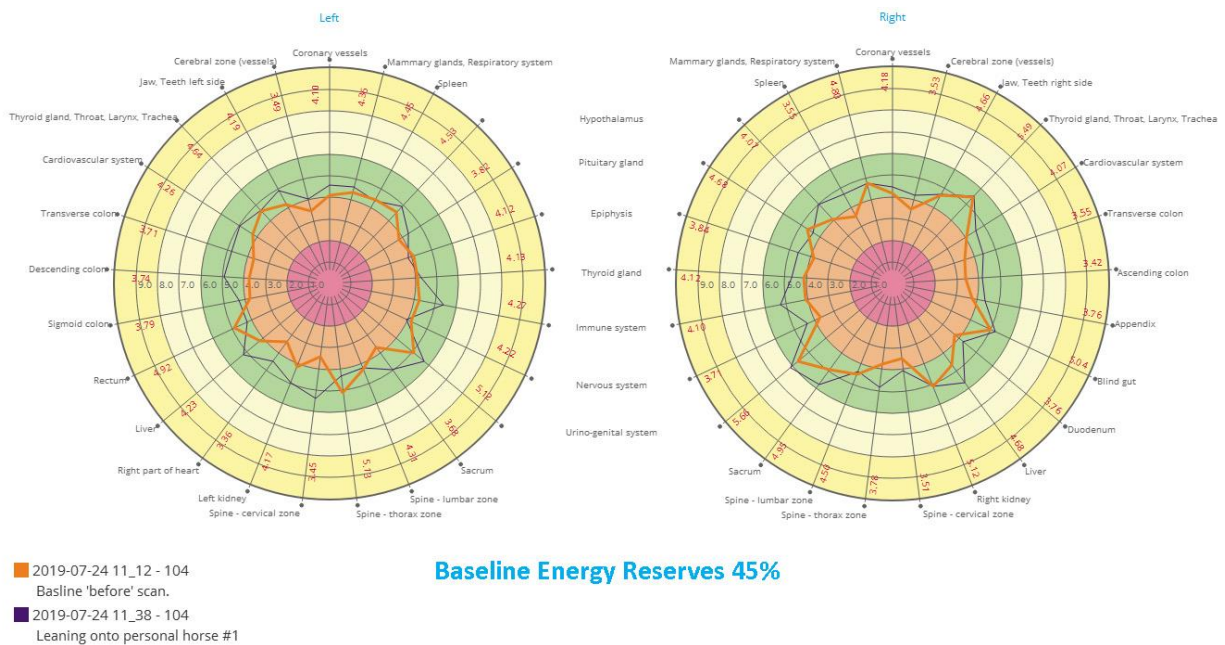


Figure 61. BT scan revealed energy reserves of 45%, which is on the lower end of adequate. Her energy diagram was fairly uniform, with a few systems showing diminished energy.

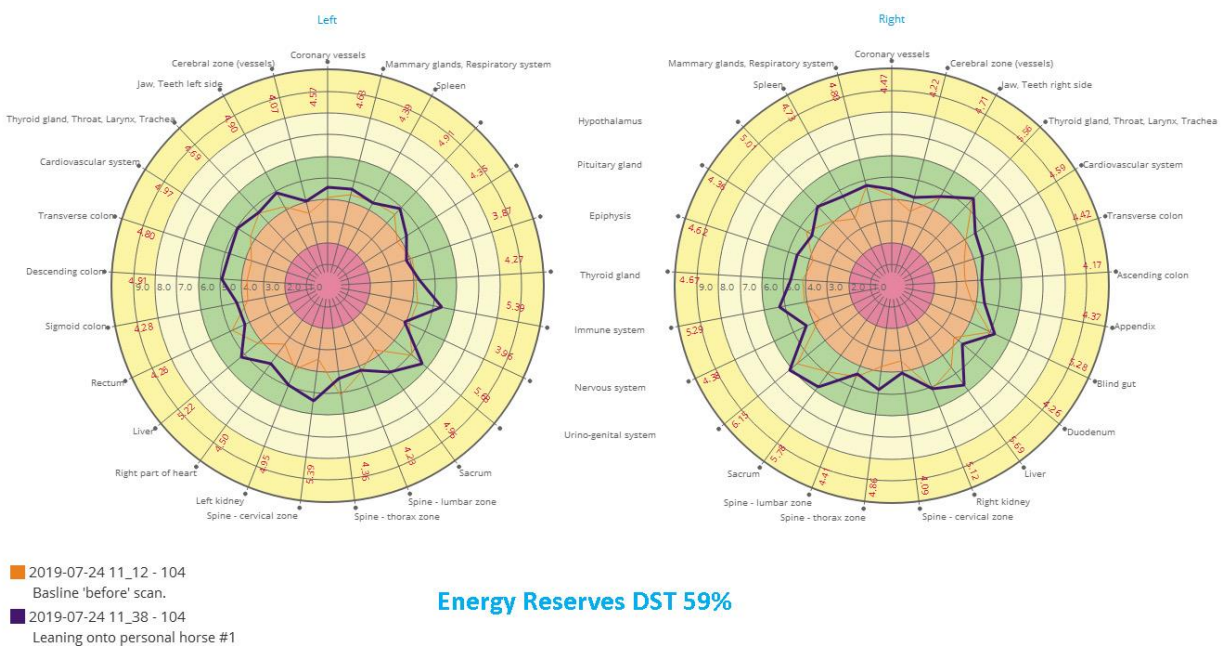


Figure 62. DST with a horse allowed her energy diagram to further expand and soften, which indicates better availability and distribution between organ systems. Her energy reserves were boosted to 59%, representing an increase of 23.73%.

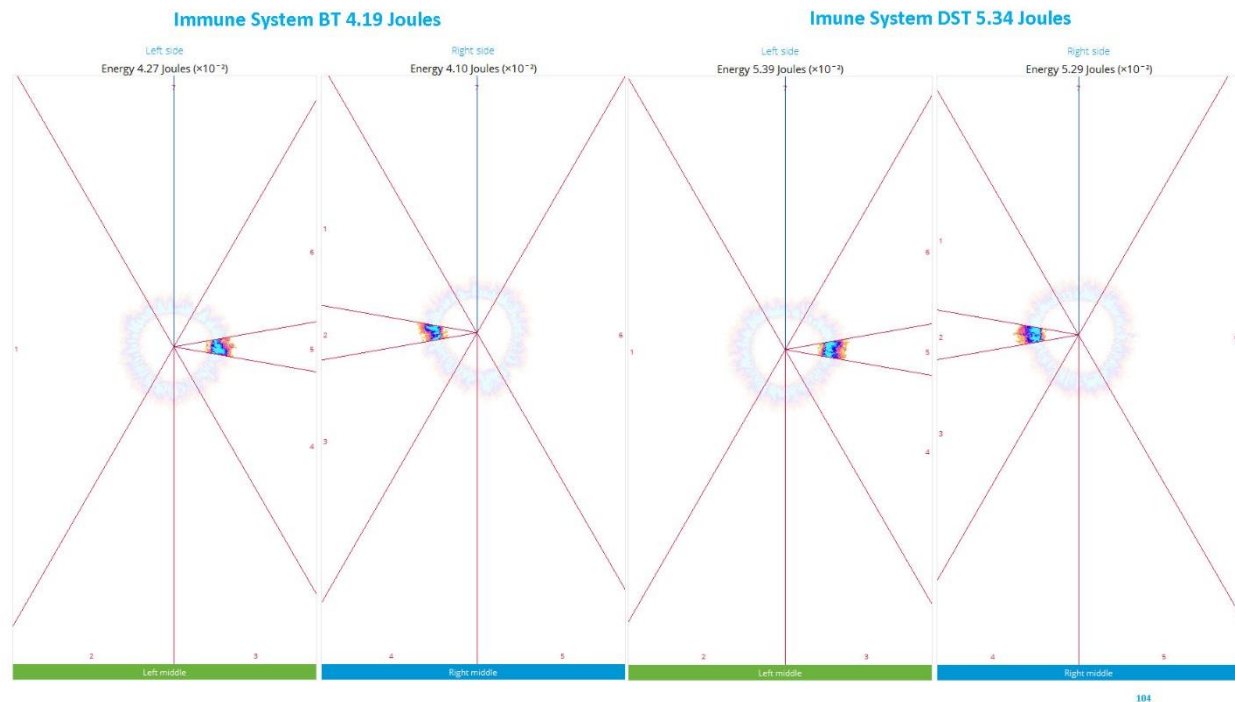


Figure 63. A 27.45% increase in energy within the immune system occurred as a result of DST with personal horse.

Case Report Discussion: Subject 104

This subject had adequate energy at BT, but DST with her personal horse boosted that energy even further into the optimal zone. The BT scan shows heavy striations, or interruptions throughout her field. The incoming energy from DST provided some reduction in striations, allowing her field to enlarge and soften, while also increasing the average size of her chakras. A notable reduction in stress occurred upon DST, and her ANS quieted significantly going from six imbalanced organ systems, to only three. Similar to her energy field, her energy reserves were adequate at 45%, but increased to a more optimal level of 59% during DST. Immune system energy was positively impacted by DST.

Case Report: Subject 107: Female, Adolescent, Non-Animal Person, Tested with Unfamiliar Horse

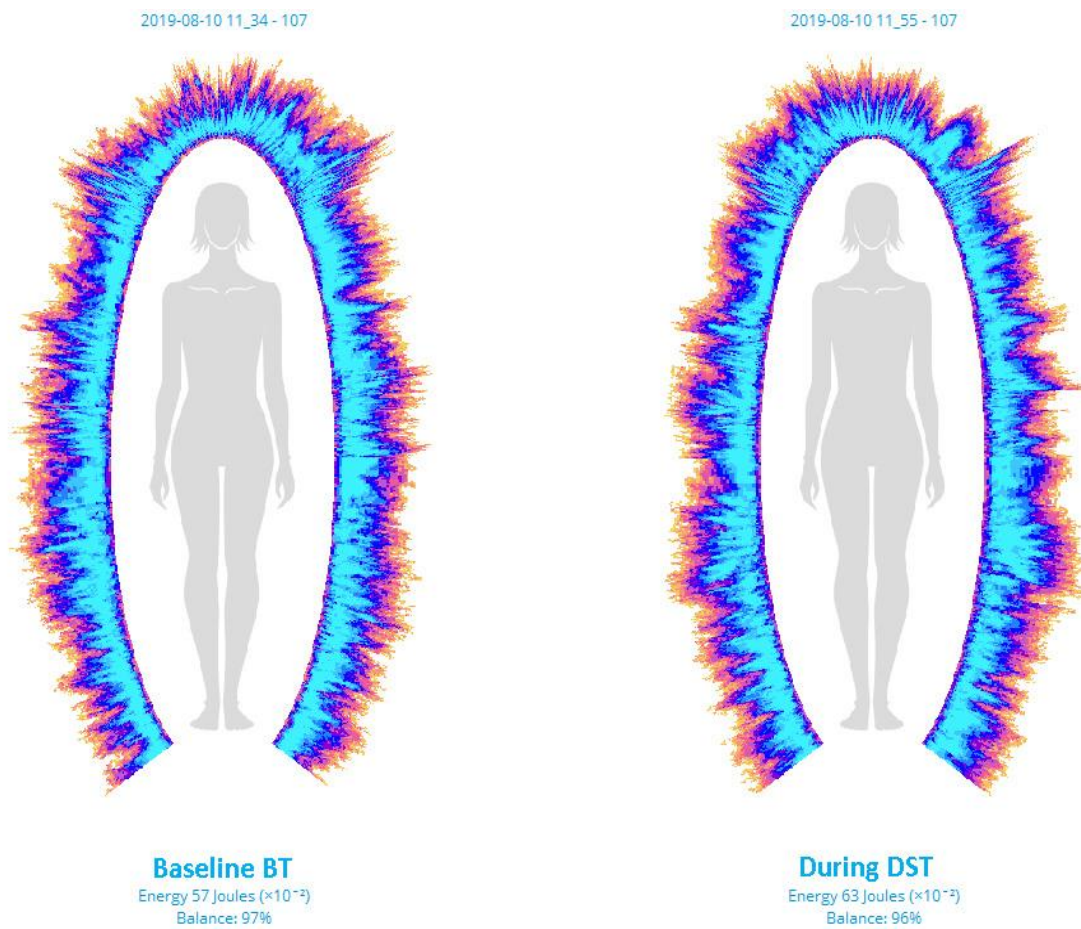


Figure 64. This subject presented with adequate energy Joules ($\times 10^{-2}$) of 57, and a fairly uniform field with some striations. DST with an unfamiliar horse provided a boost to 63 Joules ($\times 10^{-2}$), with some enlargement of her energy field.

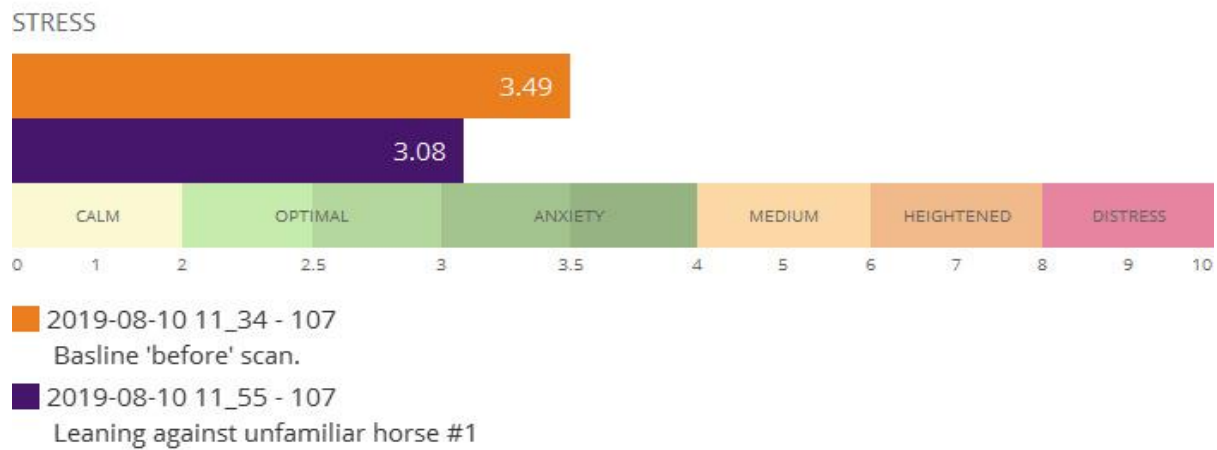


Figure 65. DST with an unfamiliar horse provided a notable 11.75% decrease in stress.

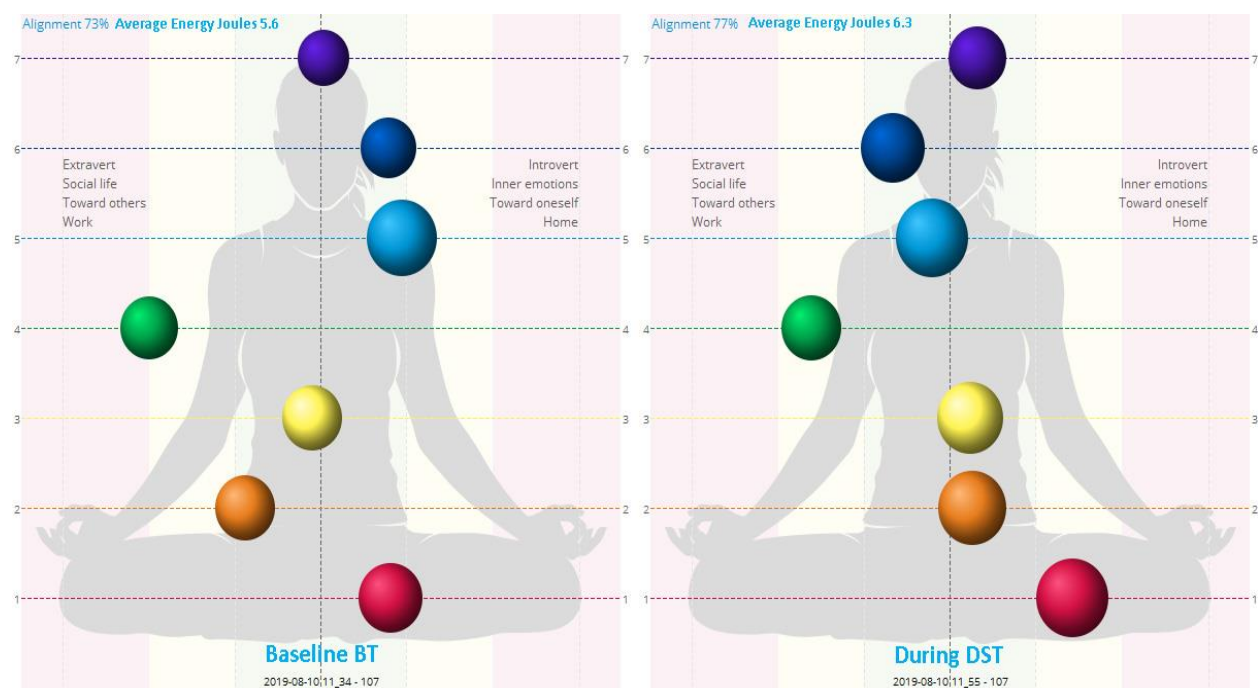


Figure 66. Average chakra size increased by 12.5% during DST. This subject's alignment increased slightly.

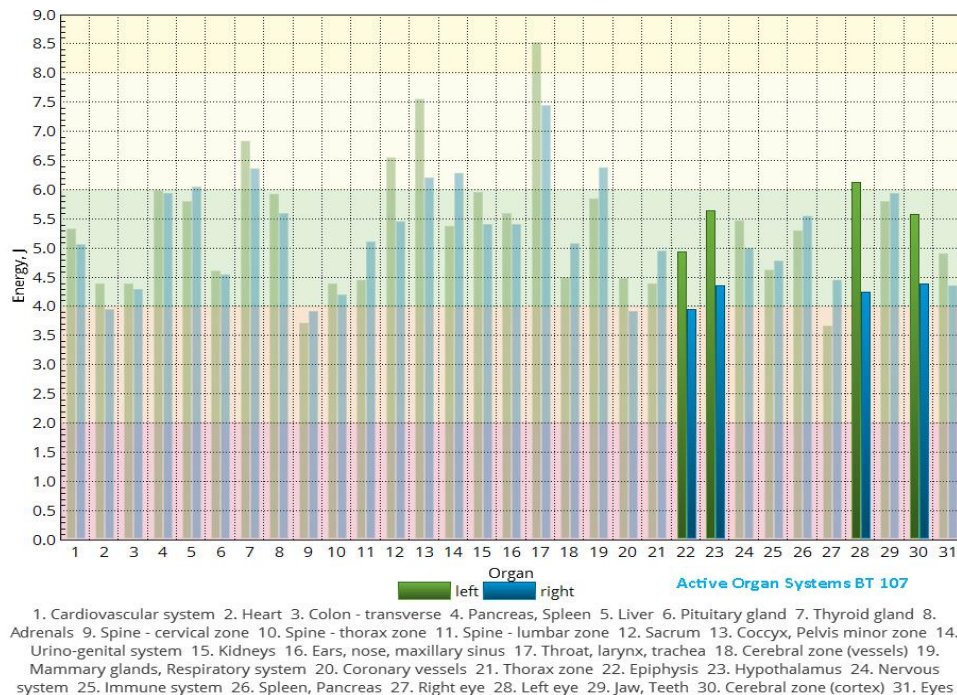


Figure 67. The BT scan revealed four imbalanced organ systems.

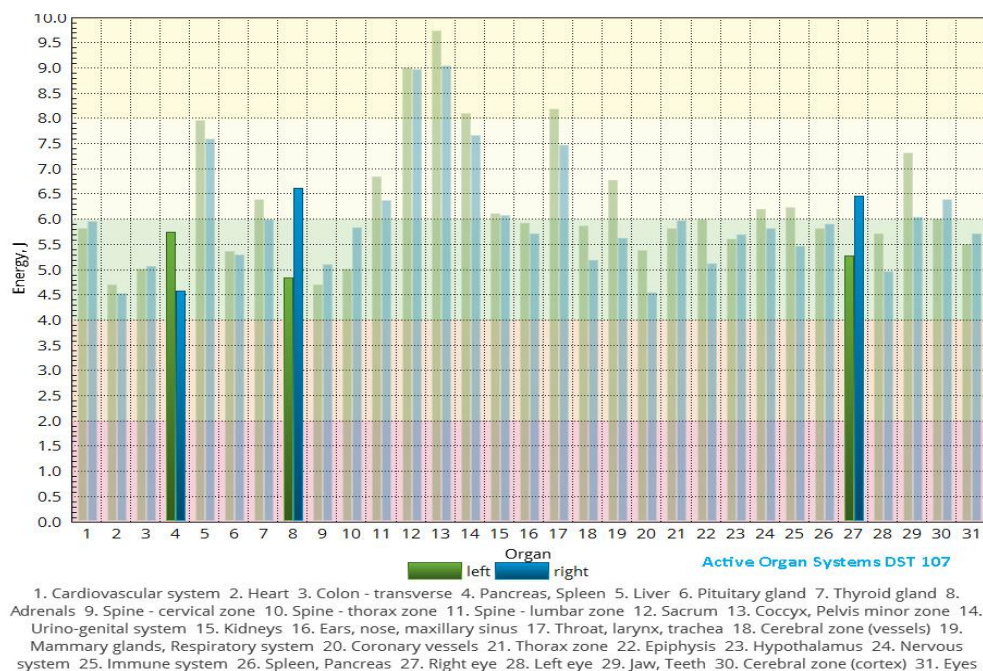


Figure 68. During DST, her PNS activated, facilitating a reduction to only three imbalanced organ systems.



Figure 70. While the energy diagram remains irregular in shape, DST with a horse did increase her energy to the systems that were deficient. Her energy reserves soared to 100%.



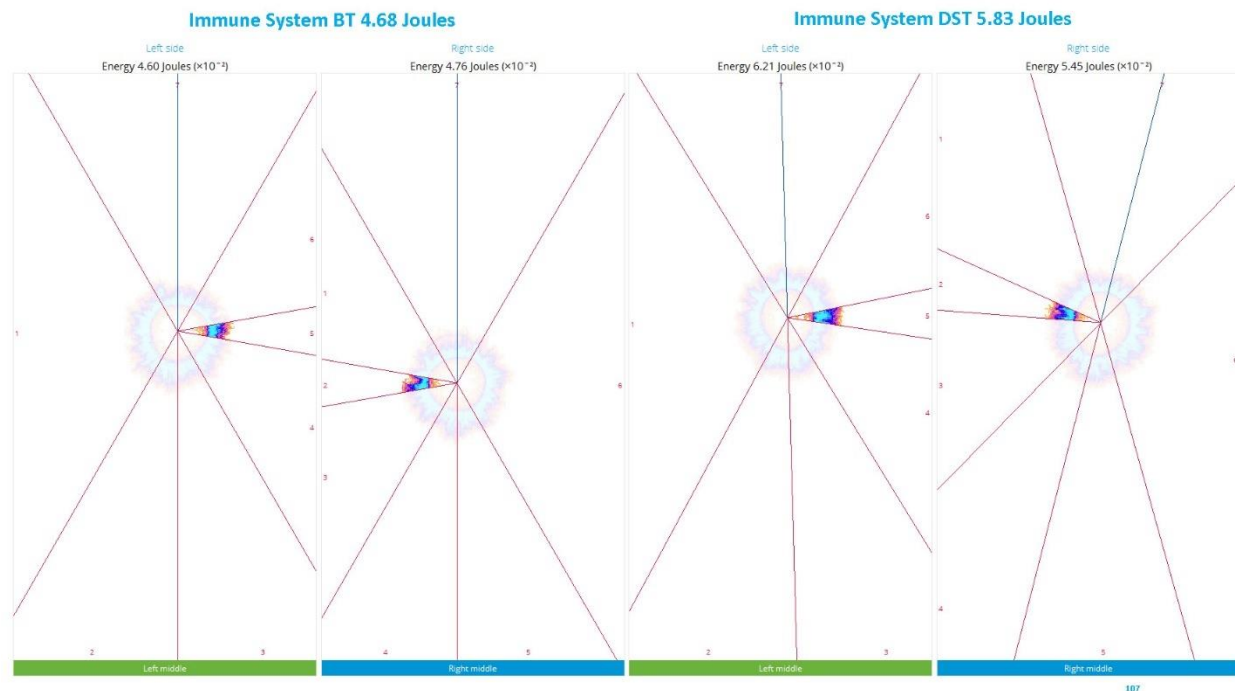


Figure 71. A 24.57% increase in immune system energy resulted from DST with an unfamiliar horse.

Case Report Discussion: Subject 107

This subject's energy field is reflective of vibrant teen energy. Her energy field at BT is large and cohesive, and continues that patterning upon DST with an unfamiliar horse. This subject does have some striations at the baseline scan, which indicates activity within certain systems. Interestingly, the striations don't appear to decrease during DST, rather, they move. The subject's stress level was immediately, notably reduced by during DST, despite being a non-animal person. Her average chakra size and her alignment increased DST. Her chakra alignment was far from optimal at the baseline scan, so the slight increase of 5.19% is meaningful here. The shape of her energy diagram did soften somewhat, indicating better energy distribution. Her energy reserves increased to 100% upon DST, and energy within her immune system was also enhanced.

Demographics

n = 19, 34 scans	Total	Percentage
Men	4	21%
Women	14	74%
Adult	14	74%
Adolescent (under 18 years)	4	21%
Tested with Familiar Animal	23	68%
Tested with Unfamiliar Animal	11	32%
Scanned with Female Animal	10	29%
Scanned with Male Animal	24	71%
Tested with Dog	22	65%
Tested with Horse	12	35%
Animal Lover	11	58%
Dog-specific Lover	5	26%
Non-Animal Person	3	16%

Table 1: Demographics

Quantitative Data Analysis

The hypothesis for the data analysis was as follows:

H0: there is no statistically significant increase in stated variable (Null)

H1: there is a statistically significant increase in stated variable

While the case reports are interesting and provide valuable data regarding the goals of this research, the quantitative data analysis of all 34 scans provides a larger frame of reference regarding efficacy. Hence, each set of BT and DST variables were checked for normal distribution using the Shapiro-Wilk test. Energy field joules, average chakra size and immune system energy showed normal distribution; therefore, a paired t-test was utilized. Because the data for these three variables was normally distributed, the effects size was determinable using Cohen's *d*. However, the BT and DST sets of variables for stress, energy reserves and energy organ system balance did not fall within normal distribution, thus a Wilcoxon matched pairs test

was warranted. The data for these three variables did not fall within normal distribution, therefore Cohen's d was not an appropriate calculation. Remarkably, the null hypothesis was rejected in all six variables, since the p -values were less than the chosen level of significance $\alpha = 0.05$. Therefore, we conclude that in each tested variable, there was a statistically significant change.

t-Test n = 34			
VARIABLE		BASELINE	DURING TOUCH
Energy Field	Mean	50.23529412	54.61764706
	Variance	25.21568627	24.18270945
	p Value	$p < .0000$	
	Cohen's d	0.8817	
Avg Chakra Size	Mean	4.676470588	5.188235294
	Variance	0.370338681	0.338039216
	p Value	$p < .00000$	
	Cohen's d	0.8606	
Immune System Energy	Mean	4.465588235	4.888823529
	Variance	0.21391631	0.235689483
	p Value	$p < .00000$	
	Cohen's d	0.8928	

Table 2: t-test results for variables with normal data distribution

Wilcoxon Matched Pairs Test n = 34			
VARIABLE		BASELINE	DURING TOUCH
Stress	Mean	3.46	3.33471
	p Value	$p < .00152$	
Energy Reserves	Mean	52.21	68.97
	p Value	$p < .00000$	
Organ Sys Balance	Mean	5.24	3.38
	p Value	$p < .00104$	

Table 3: Wilcoxon Matched Pairs test results for non-normally distributed data

Findings

The p values generated from all six variables are notable and very clearly support that DST with an animal influences the HES. In order to verify veracity on such robust p values, the Family-Wise Error Rate (FWER) was calculated using the Benjamini-Hochberg test. This test is more stringent than the False Discoveries Rate (FDR) calculation. ("False Discovery Rate," 2017) The test revealed that the p values in the initial analysis were reliable.

Rank	Variable	Original p value	Critical Value	Benjamini-Hochberg Adjusted p value	Significant using an FDR of 0.05?
1	Energy Reserves	0	0.00625	0	Yes
2	Avg Chakra Size	0	0.0125	0	Yes
3	Immunity	0	0.01875	0	Yes
4	Energy Field	0	0.025	0	Yes
5	Org Sys Balance	0.00104	0.03125	0.001664	Yes
6	Stress	0.00152	0.0375	0.002026667	Yes

Table 4: Retest results verifying validity of initial p values

The statistical significance as determined by the p values validates that this study was successful. However, the effect size, or *how* successful it was, is also important. For data that was normally distributed, Cohen's d was calculated to establish effect size, resulting in $d = .9469, 1.238, .9191$ respectively. This indicates a large effect size, defined as 0.8 or greater. Therefore, statistically, the magnitude of change upon the HES as influenced by DST with an animal is compelling.

Variable #1 Energy Field: Since $p < 0.0000$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant increase in the energy field distribution. Average energy increased in 34 of 34 scans. The BT scans were all within optimal function range (40-70 Joules) at the baseline scan; yet the donated energy from DST with a horse or dog propelled each even further into the optimal range.

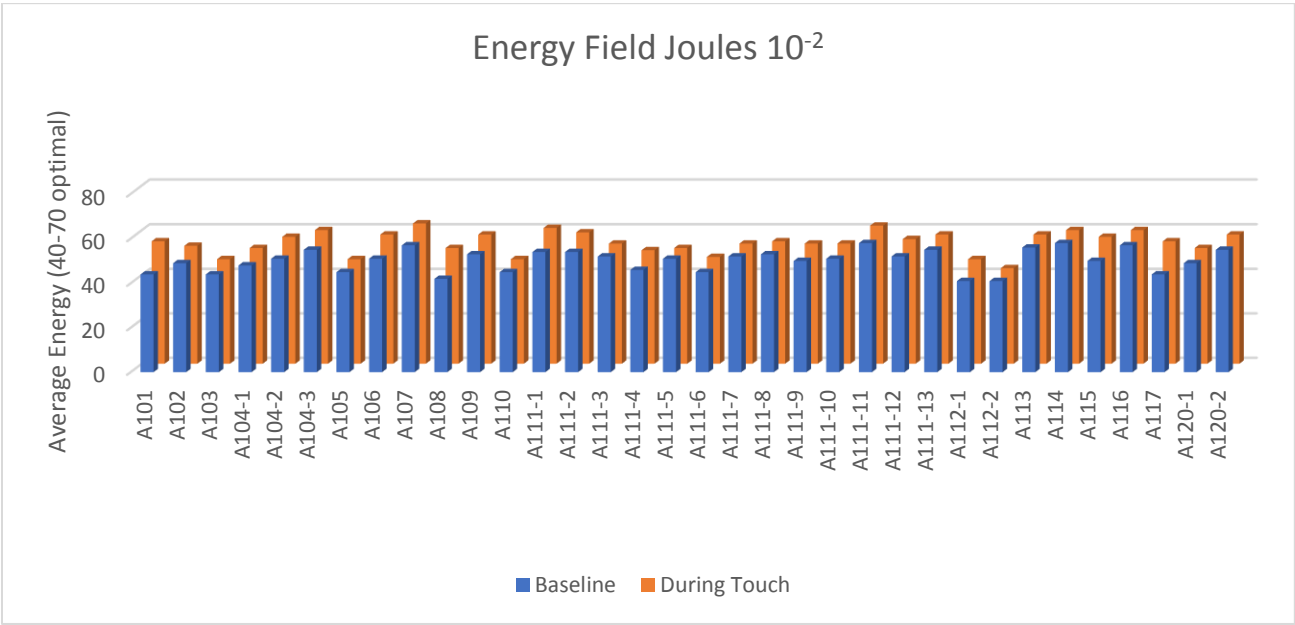


Figure 72: Cumulative Results: Increase in Energy Field for all subjects, during DST with a dog or horse.

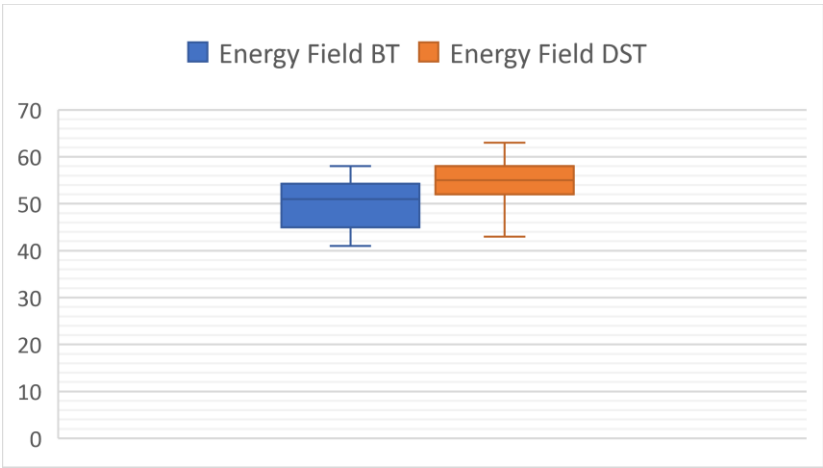


Figure 73. Consolidated Results: Energy Output distribution comparison BT and during DST with a dog or horse.

Variable #2 Average Chakra Size: 100% of 34 scans revealed a positive increase in average chakra size, indicative of active energy flowing into the chakras. Since $p < 0.0000$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant increase in average size/activation of the chakras. In all scans, the average chakra size remained within optimal range of 4.0 to 7.0 Joules (10^{-2}), during DST.

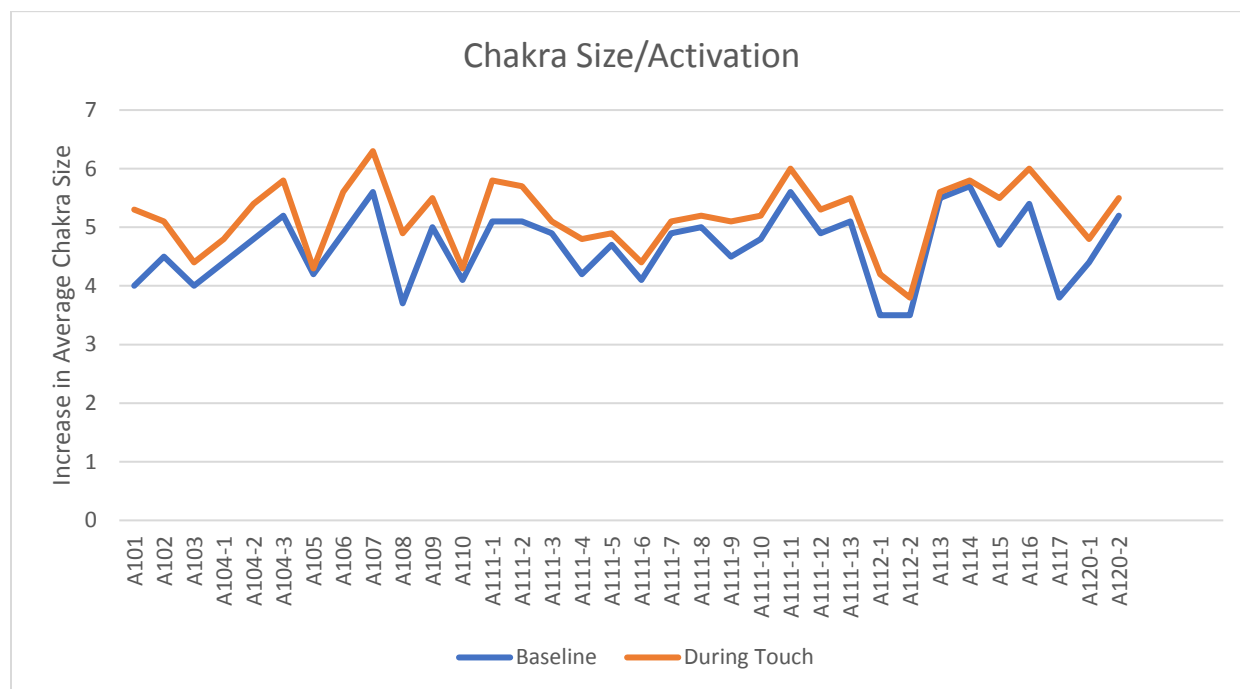


Figure 74: Increase in average Chakra Size/Activation, upon DST with a dog or horse, for all subjects.

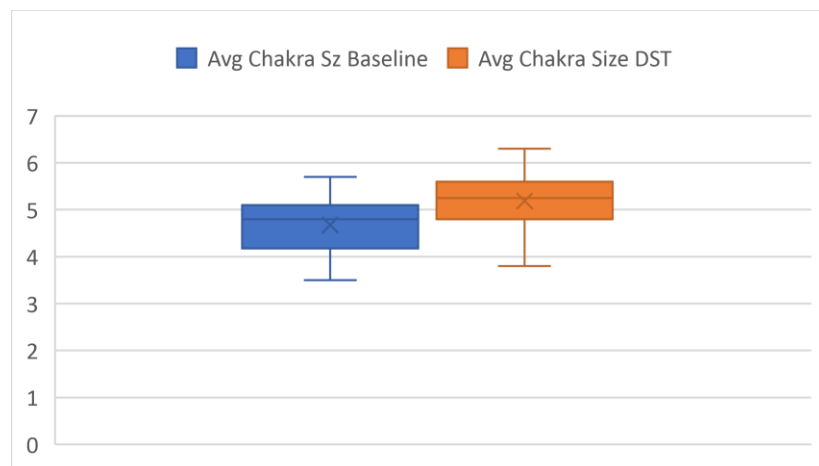


Figure 75: Consolidated Results: Average Chakra Size/Activation comparison BT and during DST with a dog or horse.

Variable #3 Stress: Since $p < 0.00152$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant decrease in the stress coefficient. Stress was reduced in 82% or 28 of 34 scans. The reductions DST range from less than 1% to 17.51%, with the average reduction at 5.7814%.

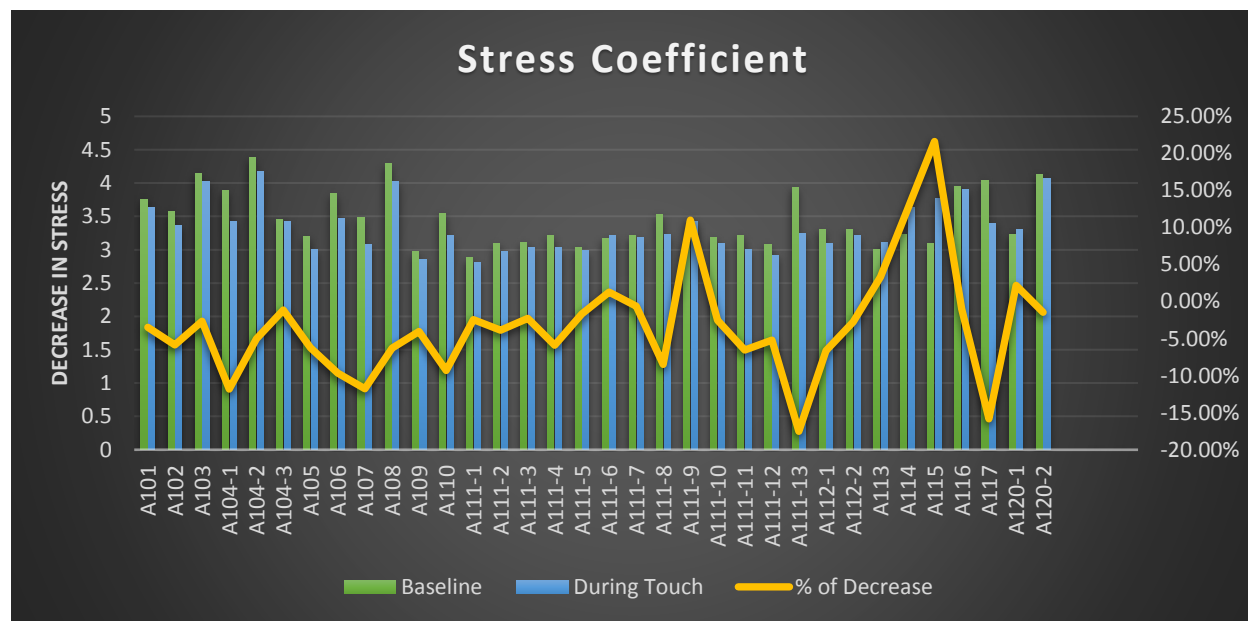


Figure 76: Changes in Stress upon DST with a dog or horse, for all subjects.

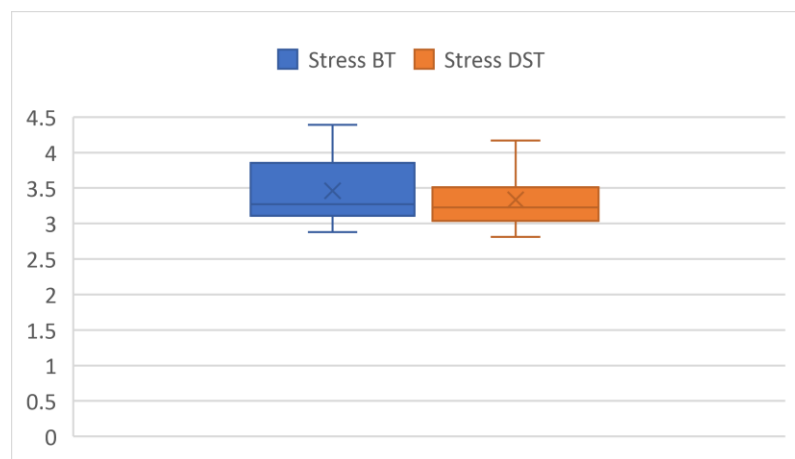


Figure 77: Consolidated Results: Stress BT and during DST with a dog or horse.

Variable #4 Energy Reserves: Energy Reserves improved noticeably, with 34 of 34 scans showing an increase. Since $p < 0.0000$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant increase in the Energy Reserves. The extent of improvement was very broad, ranging from 3.26% up to 766.67%. The average increase was 70.72%. Removing the outliers of 300% and 776.67%, the adjusted average remains remarkable at 41.80 %.

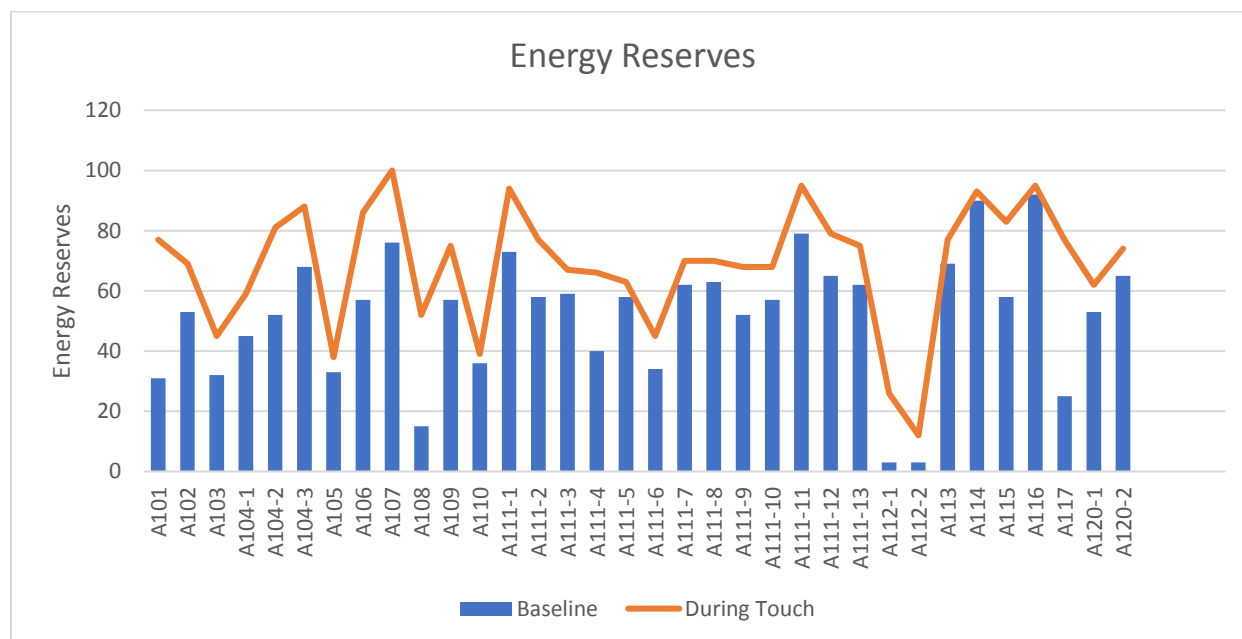


Figure 78: Increase in Energy Reserves for all subjects, during DST with a dog or a horse.

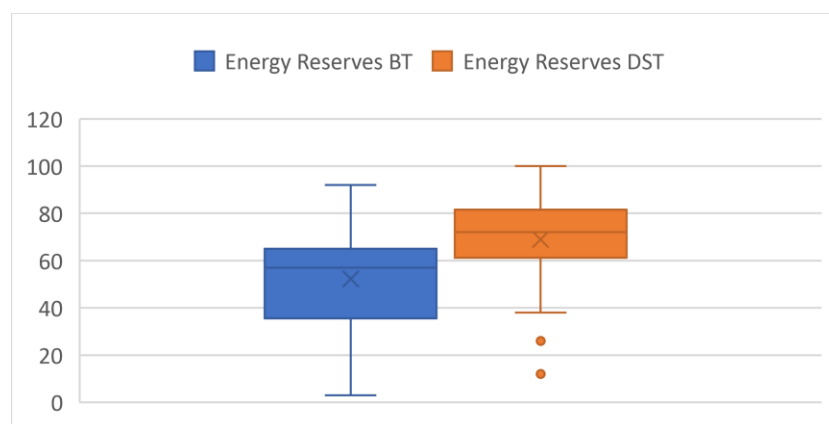


Figure 79: Consolidated Results: Energy Reserves BT and during DST with a dog or horse.

Variable #5 Organ System Balance: 73% of scans indicated improved organ system balance, or increased parasympathetic activity. 15% showed a slight increase, while 12% remained unchanged. Since $p < 0.000104$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant decrease in organ system imbalance, as a result of DST with a horse or a dog.

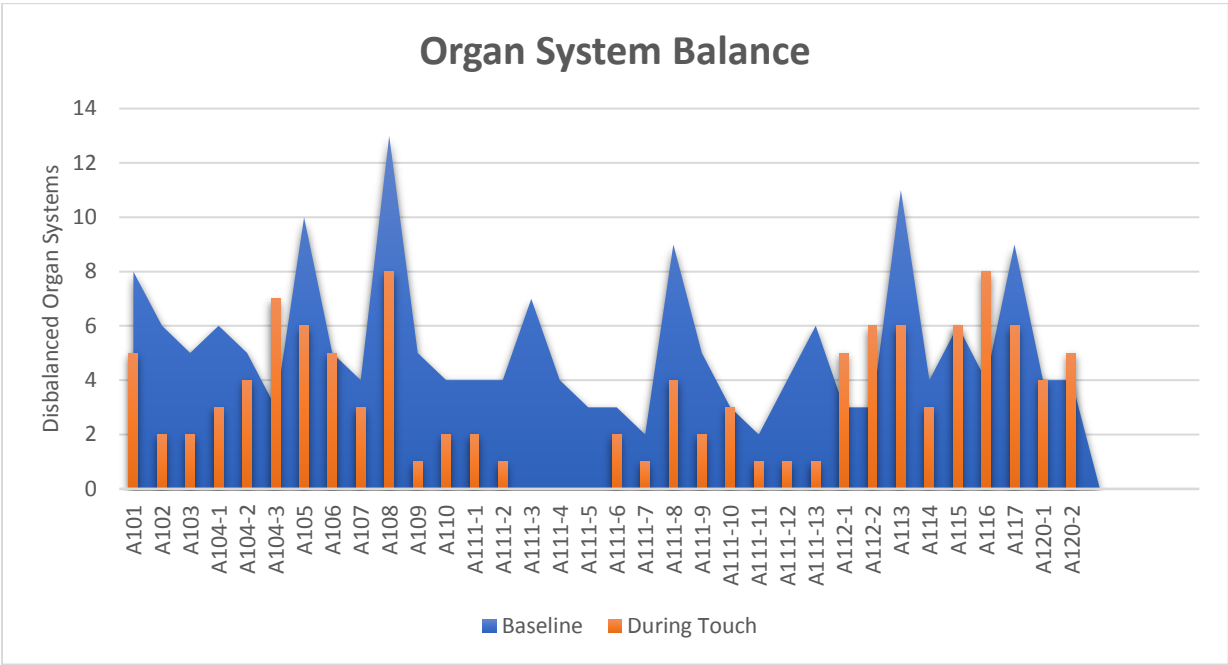


Figure 80: Changes within Organ System Balance for all subjects, during DST with a dog or horse.

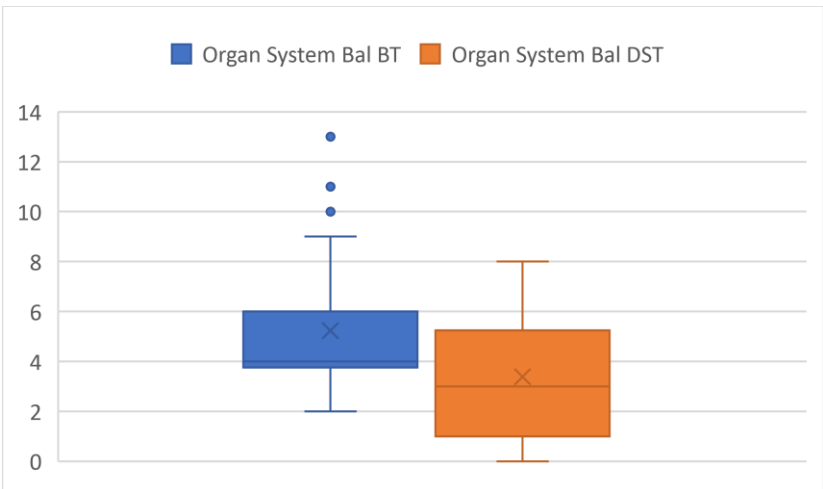


Figure 81: Consolidated Results: Organ System Balance BT and during DST with a dog or horse.

Variable #6 Immune System Energy: Energy within the immune system increased in 28 of 34 scans, or 82%. The average improvement was 11.178% from DST with an animal. The average decrease was minimal, at 4.33%. Since $p < 0.0000$ is less than the chosen level of significance $\alpha = 0.05$, we can reject the null hypothesis and conclude that there is a statistically significant increase in immune system energy.

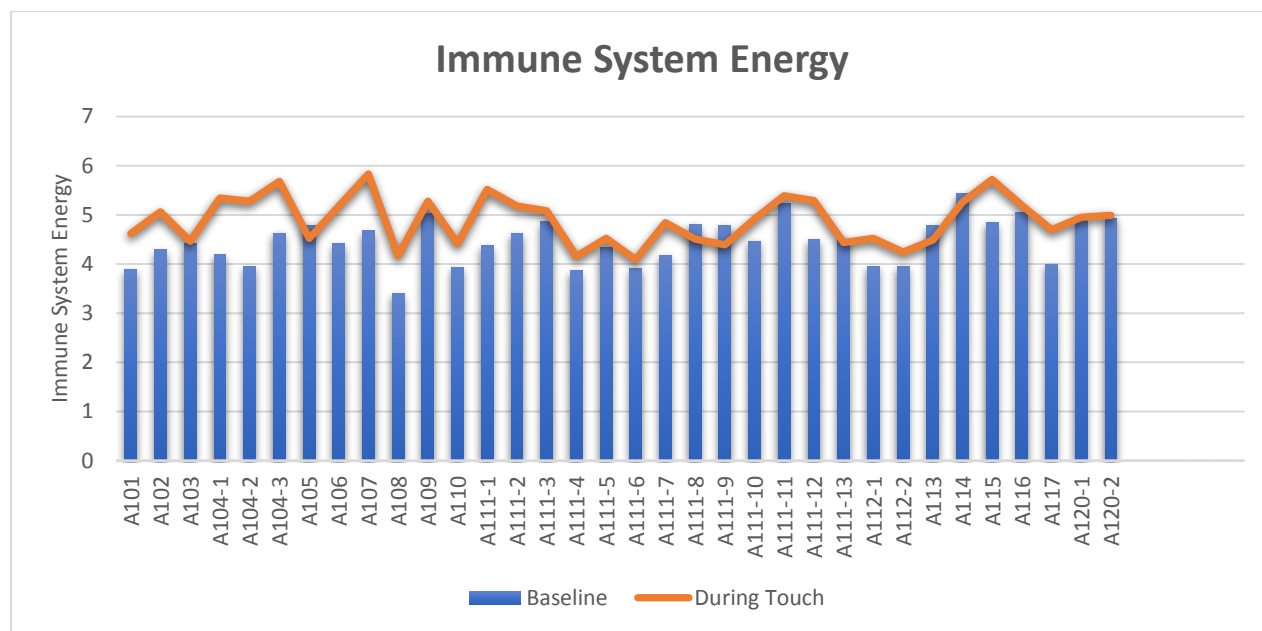


Figure 82: Cumulative Results: Changes within Immune System Energy, for all subjects, during DST with a dog or horse.

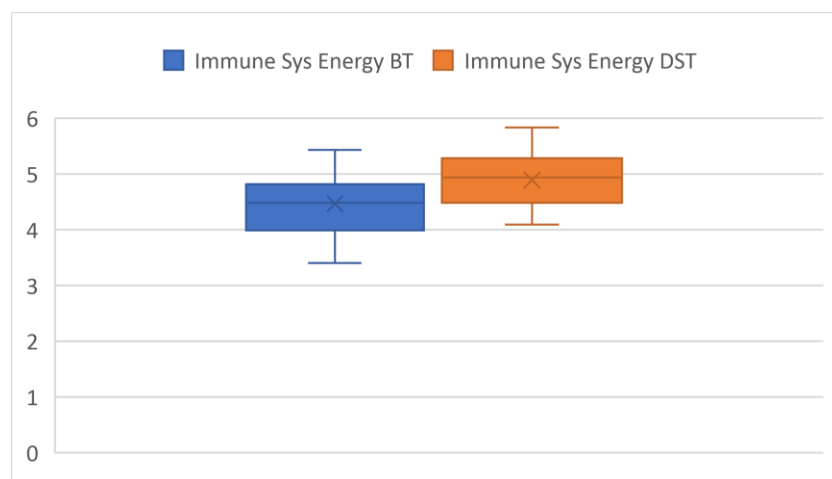


Figure 83: Consolidated Results: Energy in the Immune System BT and during DST with a dog or horse.

Repeatability and Reliability

In an effort to test repeatability and reliability, four subjects were measured multiple times. When possible, they were tested with various animals. The following table illustrates the efficacy, value, and veracity of DST with a dog or a horse, as measured with Bio-Well GDV.

Columns for each variable show the BT and DST raw scores. Cells highlighted in yellow indicate an effect that opposes the hypothesis of this study. There are very few opposing results, even with repeated tests.

Key: In the Animal column: D indicates a scan with a dog, H indicates a scan with a horse. F means Familiar, U means Unfamiliar. Sizing required the table to be segmented into three sections, showing two BT/DST variables each.

SUBJECTS TESTED FOR REPEATABILITY/RELIABILITY						
ID#	Date	Energy BT	Energy DST	Chak BT	Chak DST	Animal
A104-1	7/24/2019	48	52	4.4	4.8	F H1
A104-2	9/15/2019	51	57	4.8	5.4	F D1
A104-3	8/10/2019	55	60	5.2	5.8	F H2
A111-1	6/21/2019	54	61	5.1	5.8	F D1
A111-2	6/23/2019	54	59	5.1	5.7	F D1
A111-3	7/11/2019	52	54	4.9	5.1	F D2
A111-4	7/17/2019	46	51	4.2	4.8	F D2
A111-5	7/20/2019	51	52	4.7	4.9	F D2
A111-6	7/24/2019	45	48	4.1	4.4	U H1
A111-7	8/12/2019	52	54	4.9	5.1	F D1
A111-8	8/14/2019	53	55	5	5.2	U D3
A111-9	9/15/2019	50	54	4.5	5.1	U H2
A111-10	9/21/2019	51	54	4.8	5.2	F D1
A111-11	10/18/2019	58	62	5.6	6	F D1
A111-12	3/29/2020	52	56	4.9	5.3	F D2
A111-13	4/1/2020	55	58	5.1	5.5	F D2
A112-1	8/27/2019	41	47	3.5	4.2	F D1
A112-2	8/27/2019	41	43	3.5	3.8	F D2
A120-1	3/29/2020	57	60	4.4	4.8	F D1
A120-2	4/5/2020	44	55	5.2	5.5	F D2

Table 5: Repeatability and reliability for Energy Distribution and Average Chakra Size

SUBJECTS TESTED FOR REPEATABILITY/RELIABILITY						
ID#	Date	Stress BT	Stress DST	OrgSys BT	OrgSys DST	Animal
A104-1	7/24/2019	3.89	3.43	6	3	F H1
A104-2	9/15/2019	4.39	4.17	5	4	F D1
A104-3	8/10/2019	3.46	3.42	3	7	F H2
A111-1	6/21/2019	2.88	2.81	4	2	F D1
A111-2	6/23/2019	3.1	2.98	4	1	F D1
A111-3	7/11/2019	3.11	3.04	7	0	F D2
A111-4	7/17/2019	3.22	3.03	4	0	F D2
A111-5	7/20/2019	3.04	2.99	3	0	F D2
A111-6	7/24/2019	3.17	3.21	3	2	U H1
A111-7	8/12/2019	3.21	3.19	2	1	F D1
A111-8	8/14/2019	3.53	3.23	9	4	U D3
A111-9	9/15/2019	3.09	3.43	5	2	U H2
A111-10	9/21/2019	3.18	3.1	3	3	F D1
A111-11	10/18/2019	3.22	3.01	2	1	F D1
A111-12	3/29/2020	3.08	2.92	4	1	F D2
A111-13	4/1/2020	3.94	3.25	6	1	F D2
A112-1	8/27/2019	3.31	3.09	3	5	F D1
A112-2	8/27/2019	3.31	3.22	3	6	F D2
A120-1	3/29/2020	3.23	3.3	3.23	3.3	F D1
A120-2	4/5/2020	4.13	4.07	4.13	4.07	F D2

Table 6: Repeatability and reliability for Stress and Organ System Balance

SUBJECTS TESTED FOR REPEATABILITY/RELIABILITY						
ID#	Date	E Res BT	E Res DST	Imm BT	Imm DST	Animal
A104-1	7/24/2019	45	59	4.19	5.34	F H1
A104-2	9/15/2019	52	81	3.95	5.28	F D1
A104-3	8/10/2019	68	88	4.63	5.68	F H2
A111-1	6/21/2019	73	94	4.37	5.52	F D1
A111-2	6/23/2019	58	77	4.62	5.18	F D1
A111-3	7/11/2019	59	67	4.86	5.08	F D2
A111-4	7/17/2019	40	66	3.86	4.16	F D2
A111-5	7/20/2019	58	63	4.33	4.52	F D2
A111-6	7/24/2019	34	45	3.91	4.09	U H1
A111-7	8/12/2019	62	70	4.18	4.84	F D1
A111-8	8/14/2019	63	70	4.81	4.51	U D3
A111-9	9/15/2019	52	68	4.79	4.39	U H2
A111-10	9/21/2019	57	68	4.46	4.92	F D1
A111-11	10/18/2019	79	95	5.24	5.39	F D1
A111-12	3/29/2020	65	79	4.5	5.29	F D2
A111-13	4/1/2020	62	75	4.5	4.44	F D2
A112-1	8/27/2019	3	26	3.95	4.52	F D1
A112-2	8/27/2019	3	12	3.95	4.24	F D2
A120-1	3/29/2020	53	62	4.88	4.95	F D1
A120-2	4/5/2020	65	74	4.93	4.99	F D2

Table 7: Repeatability and reliability for Energy Reserves and Immune System

Chapter 8: Discussion

Observations

Through analyzation and cross validation, the data captured in this project successfully supports that DST with an animal reliably influences the HES. Initial tests indicated that energy donated by dogs was appropriate and easily assimilated into the HES. Dogs are naturally amenable and participatory; so, the idea of including other, more seemingly indifferent animals,

to determine if there was a difference in response, became an objective. This is not to say that other animals are less interested in engaging with humans; rather, the idea was to test animals who engage less exuberantly than canines. There was some question, based on the sheer size of their energy fields, whether DST with horses might overwhelm or inundate the HES. However, the size of the animal did not produce any overpowering or detrimental effects. DST with both dogs and horses provided similar levels of beneficial, measurable energy.

If one animal has the capacity to influence the HES, logic prescribes that others do as well. In order to investigate this as completely as possible, cats were included in the original project design. Recruiting even one ‘cat person’ proved impossible. Five separate appointments for BT and DST scans were set with cats known to love sitting on laps, which would have facilitated easy testing. In every instance the cat owner canceled at the last minute. The reasons were interesting: One potential male subject called and said, “I got really scared of doing this last night, and I just can’t. I got really sick over it.” Another potential female subject said “I cannot imagine that this will work, so I do not want to do it.” Despite trying to pique her interest to see if it *might* work, or if we *might* see any results, she ultimately refused participation. Including cats was desirable because they aren’t in the top two of most studied pets, and they can be more aloof than dogs or horses. Measuring their energy influences on the HES would have provided additional, possibly important data regarding the capability of domestic animals as energy donors. Unfortunately, though, only two separate species of animals were readily available for participation in this study.

Including animals did add a level of unpredictability to the testing process. Because animals fidget, need time to settle, spook, etc., the timing sequence between the baseline and during touch scans was variable. While the lack of rigid time standardization between BT and

DST may be criticized by conventional researchers, it is a small complication that in no way negates the positive influences upon the HES. Adherence to strict standards, in obedience to conventionalism, can be likened to putting blinders on both a rider and a horse while traversing a challenging trail: they maintain the path by looking straight ahead, but they miss other interesting or pertinent aspects during their process, including other gentler paths or more expansive trails.

The Bio-Well measures many components of the HES, but due to time and space limits in this dissertation, six specific variables were chosen for assessment. Each of these six is directly correlated with *general* health and functioning. Also, each of these variables is universally familiar and straightforward for the majority of people. For example, low or high energy as related to general energy distribution may be easier to comprehend than the nuances of twelve separate TCM meridian systems. Also, the psychophysiological components represented by each of these independent variables are amenable to rapid improvement.

Although this study population is considered modest with an $n = 18$, both qualitative and quantitative data proved meaningful. Small sample sizes often result in negative consequences for the standard significant p value of $p < .05$. Western medicine research guidelines typically proclaim that larger sample sizes are more likely to detect any significant relationships appearing in said research; therefore, larger studies are deemed superior. (Thiese, Ronna, & Ott, 2016) However, this research project produced significant, positive results across the board, even with the smaller sample size of $n = 18$. Specifically, energy increased in all 34 scans within average energy field, energy reserves and average chakra size. At no point did incoming energy during DST drive a subject's baseline measurements into a disproportionate state. Rather, DST with either a dog or horse affected each independent variable appropriately, with suitable inflow to

advance each subject into a higher, more optimally functioning state. The significance of these increases is valuable, in that general supplemental energy is available for immediate assimilation and use, in multiple psychophysiological systems. As cells age, deteriorate or begin to die, their energy decreases and they lose the ability to efficiently emit and receive light. The upsurge in energy reserves offers the body profound assistance for dealing with current and future health issues on that cellular level.

The prevalence of subjects also showed increased energy within the immune system, and improvement with organ disbalance. The value of these corrections is tremendous. The boost to the immune system relieves overload, fostering better adaptability and flexibility, while the respite and balance provided to the ANS puts the body in a better homeostatic range. The inherent connection of the meridians and chakras to organs and systems allowed them to appropriately receive and redistribute the donated energy, resulting in notable improvement in organ imbalance. While the majority of subjects showed relieved stress upon DST, 82% respectively, the percentage of the decrease was lower than anticipated. From a conventional medicine standpoint, the average reduction in stress (5.7814%) may not be considered clinically appreciable. From a quantum integrative medicine perspective, any decrease in stress is appreciated by the human body. Moreover, it is prudent to remember that the stress coefficient, here, is based on a subject's current psychophysiological state to both inner and outer stimuli. While psychological reactions can be a significant contributor to stress, the cumulative benefits of the combined results from all of the variables in this study likely provide further summative relief from both emotional and physical stress. That is to say, the alleviation of stress is occurring by several methods, and in more than one region of the HES.

Overwhelmingly, the energetic changes measured during DST were stable and steady, which indicate an *inflow* of energy from one being to another, rather than a *transfer* between the two. While no devices currently exist to evaluate real-time energy levels within an animal's biofield, we can extrapolate from the human scans that an *exchange* of energy between two beings would result in inconsistent, highly variable results. In other words, some scans would indicate humans receiving energy and others would display them bestowing it upon the animal. This would result in notable fluctuations on the human scans. Instead, collectively, the data in this study reveals consistent, increased, incoming energy; thereby signifying a direct donation.

One of the most intriguing aspects of this research is that intention did not appear to factor into the animals' willingness or capacity to donate energy. In human-based energy medicine, the consideration, initiation, and cementing of intention is imperative in order to reach and effect the proposed subject. This does not seem to be the case when engaging with animals on a therapeutic endeavor. Many of the dogs in this project were actually asleep during the scanning process, and a few were on a sofa watching tv. Further, the horses were all preoccupied with slow-feed hay snacks. Their gift of light energy appears to be an unconscious offering. Perhaps animals have a camouflaged ability to express intention. Perhaps they have some sort of intuition when called to assist, that facilitates intentional yet unassuming energy flow. Or, perhaps they are innately altruistic and generous, extending unity derived from an unpolluted connection to Source Energy, and this allows their energy to emanate where it is needed without outside observation or recognition.

The human participants agreed that they felt no change during DST. They reported feeling "the same" despite experiencing real-time, beneficial psychophysiological changes. There was some skepticism among the animal-tolerate people and dog-specific lovers, whether

any changes would actually occur from DST. When time permitted, they were shown their BT/DST scans comparatively, where the results were obvious and received with amusement. Testing animal-tolerant people with dogs or horses, or dog-specific-lovers with horses, controlled for the placebo effect. Every subject in this project showed beneficial adjustments in his/her HES, in the at least five of the six independent variables. This occurred whether they believed it would or not. Further, the fact that none of the subjects specifically felt the influence of donated energy is a reflection of and testament to the organic power of innate electromagnetic connection.

The effects of DST with a dog or horse do appear to be transitory. In the interest of maintaining focus on the formal hypothesis here, follow-up scans to determine how long the influence lasts were not a planned aspect of this project. However, several informal scans were performed post-DST, to see if the effects of the energy donation would carry over. These few scans indicated that the effects occur only during DST, as the levels of energy revert close to baseline readings as soon as DST is stopped. Without data from formal follow-up scans, it is impossible to determine the length of time it takes for energy levels to revert completely to baseline levels. At this point, it is also unknown whether multiple DST sessions might have some cumulative effect that would extend the time or percentage of benefit. Future study is necessary to determine whether the transitory effects can be mollified with additional DST.

GDV, as the single means of measurement, proved reliable for recording HES changes effected through touch. It is possible other energetic exchanges may have occurred during this experiment, including light transfer from overlapping electromagnetic fields, or cardiac-field synchrony. Future experiments would benefit from the inclusion of electrocardiogram devices in order to correlate interspecies cardiac-field changes with other developments occurring during

DST. Additional data regarding cardiac-field union, especially during DST, would help to reinforce the validity of other measurable connections that arise between species. What is clear, is that during DST psychophysiological benefits are active and meaningful for the HES.

Animals' ability to affect humans on multiple energy planes may never be understood through limited human senses, but the phenomenon is now receiving support with scientific data.

Conclusion

Humans have gravitated towards relationships with animals since the beginning of time, but we may be drawn to them for more reasons than those of which we are conscious. The term *animal* actually derives from the Latin word *anima* which means breath, soul, life, vital principle ("anima," n.d.); and, while their companionship is treasured, we now know that they directly affect our living systems with the energy/light/vital force they emanate.

The data obtained in study supports that direct, steady touch with a dog or a horse effectively influences positive changes to the human energetic system for both animal-lovers and non-animal-people alike. Eighteen subjects showed immediate improvement in at least four of the six variables measured including: general energy output, chakra size, stress, organ system imbalance in relation SNS/PNS equilibrium, energy reserves and immunity. Humans are energetic beings with multiple interconnected fields, and as a result, the HES or biofield must be addressed and altered in order for change to occur. (Klinghardt, 2019, Video transcripts page 4)

DST with a dog or a horse both addresses and alters the HES organically and generically, providing meaningful changes and positive outcomes. This supports the quantum model of medicine by advancing a new health paradigm that addresses the totality of the human energetic system.

Recommendations for Future Research

The significant results of this small study suggest that further research is warranted. A larger, more diverse sample, with repeated scans, would more effectively illustrate the phenomenological psychophysiological changes occurring upon DST with an animal. The longer-term health implications of said changes should be examined, and include how to most effectively utilize increased energy as a tool towards fostering health. At this point, it is not clear how long the results last, nor if they accrue towards more permanent changes. Follow up scans would help answer these remaining questions. Finally, determining whether the animals are negatively impacted from their generous donations, is of concern and deserves consideration.

References

- 8 Reasons Why Equine Therapy Is Effective. (2015). Retrieved from <https://kahi.com/blog/animal-health/why-equine-therapy-is-effective/>
- Albrecht-Buehler, G. (1992, September 1). Rudimentary form of cellular "vision". *Proceedings of the National Academy of Sciences of the USA*, 89 (17), 8288–8292.
<http://dx.doi.org/10.1073/pnas.89.17.8288>
- Albrecht-Buehler, G. (2005, April 5). A long-range attraction between aggregating 3T3. *Proceedings of the National Academy of Sciences of the USA*, 102 (14), 5050-5055.
<http://dx.doi.org/10.1073/pnas.0407763102>
- Allen, K., Shykoff, B. E., & Izzo, Jr, J. L. (2001, October). Pet ownership, but not ACE Inhibitor Therapy, Blunts Home Blood Pressure Responses to Mental Stress. *Hypertension: Journal of the American Heart Association*, 38, 815-820.
- Anderson, D., & Jones, B. (2019). New research reveals how dogs can detect epileptic seizures up to 45 minutes before they happen. Retrieved from <https://www.businessinsider.com/dogs-smell-detect-epileptic-seizures-before-they-happen-2019-4>
- Anderson, E. (2015). This is why you care more about some animals than you care about humans. Retrieved from <http://www.bdcwire.com/this-is-why-you-care-more-about-some-animals-than-you-do-about-humans/>
- Andeweg, H. (2016). *The Universe Loves a Happy Ending*. New York, NY: Turner Publishing Company.
- anima. (n.d.). Retrieved from <https://en.wiktionary.org/wiki/anima>

Animal-assisted interventions: Definitions. (n.d.). Retrieved from

<https://www.avma.org/policies/animal-assisted-interventions-definitions>

Anufrieva, E., Anufriev, V., Starchenko, M., & Timofeev, N. (n.d.). *Thought's Registration by means of Gas-Discharge Visualization*. Retrieved from iumab.org:

<https://www.iumab.org/the-investigation-of-influence-of-thoughts-over-human-aura/>

AVMA Committee. (1998, June 1). The Human-Animal Bond. *Journal of the American Veterinary Medical Association*, 212:11, 1675.

Baer, D. (2017). People Naturally Sync Their Bodies, Breathing — and Skin. Retrieved from

<https://www.thecut.com/2017/01/how-interpersonal-synchrony-works.html>

Balsekar, R. (1992). Imprinting at Conception. In *Consciousness Speaks* (p. 75). Redondo Beach, CA: Advaita Press.

Bandara, P., & Carpenter, D. O. (2018, December). Planetary electromagnetic pollution: it is time to assess its impact. *The Lancet: Planetary Health*, 2 (12), E512-E514.

[http://dx.doi.org/10.1016/S2542-5196\(18\)30221-3](http://dx.doi.org/10.1016/S2542-5196(18)30221-3)

Barker, S. B., Knisely, J. S., McCain, N. L., & Best, A. M. (2005, June). Measuring stress and immune responses in health care professionals following interaction with a therapy dog: a pilot study. *Psychological Reports*, 90 (3), 713-729. <http://dx.doi.org/10.2466/pr0.96.3>

Barsotti, T. (2019). *BIO-WELL Practitioner Certificate Level 1 Course* [Lecture notes].

Retrieved from :

Barsotti, T. (2019). *BIO-WELL Practitioner Certificate Level 1 Course* [Lecture notes].

Retrieved from: Course PowerPoint Slides

- Bean, B. (n.d.). Vitality [zest, enthusiasm, vigor, energy]. Retrieved from <https://www.authentic happiness.sas.upenn.edu/newsletters/authentic happiness coaching/vitality>
- Becker, K. S. (2019). Women Sleep Better With a Dog in Their Bed. Retrieved from <https://healthypets.mercola.com/sites/healthypets/archive/2019/02/28/woman-sleeps-better-with-dogs.aspx>
- Becker, R. O., Reichmanis, M., Marino, A. A., & Spadaro, J. A. (1976). Electrophysiological Correlates of Acupuncture Points and Meridians. *Psychoenergetic Systems, Vol. 1*, 105-112.
- Beetz, A., Uvnäs-Moberg, K., Julius, H., & Kotrschal, K. (2012, July 9). Psychosocial and psychophysiological effects of human-animal interactions: the possible role of oxytocin. *Frontiers in Psychology*, 3 (234), 1-15. <http://dx.doi.org/10.3389/fpsyg.2012.00234>
- Bell, I. R., Lewis III, D. A., Brooks, A. J., Lewis, S. E., & Schwartz, G. E. (2003, February). Gas discharge visualization evaluation of ultramolecular doses of homeopathic medicines under blinded, controlled conditions. *Journal of Alternative and Complementary Medicine*, 9 (1), 25-38. <http://dx.doi.org/10.1089/107555303321222928>
- Benda, W., & Lightmark, R. (2004, June - August). People Whisperers. *Shift: At the Frontiers of Consciousness, Issue 3*, 30-33.
- Benjamin, D. J., Berger, J. O., Johannesson, M., Nosek, B. A., Wagenmakers, E., Berk, R., & Johnson, V. E. (2018, January). Redefining statistical significance. *Nature Human Behavior*, 2, 6-10. <http://dx.doi.org/10.1038/s41562-017-0189-z>
- Berne, S. A. (2011, July). *Effect of dolphins on the human biofield using GDV analysis*. Paper presented at the International Scientific Congress, St. Petersburg, Russia.

Bhargav, H., Srinivasan, T., Bista, S., Mooventhana, A., Suresh, V., Hankey, A., & Nagendra, H.

(2017, Jan-April). Acute effects of mobile phone radiations on subtle energy levels of teenagers using electrophotonic imaging technique: A randomized controlled study.

International Journal of Yoga, 10 (1), 16-23. <http://dx.doi.org/10.4103/0973-6131.186163>

Bhargav, P., Suresh, V., Hankey, A., & Bhargav, H. (2016). Application of gas discharge visualization technique for assessing effects of mobile phone-induced electromagnetic field on subtle energy levels of teenagers and protective value of yoga intervention.

International Journal of Yoga, 4 (2), 36-41. http://dx.doi.org/10.4103/ijny.ijoyppp_1_17

Boatwright, A. (2019). How horses help heal troubled minds in equine-facilitated psychotherapy.

Retrieved from <https://horseandrider.com/horse-health-care/equine-facilitated-psychotherapy-13327>

Branson, S., Boss, L., Cron, S., & Kang, D. (2016). Examining differences between homebound older adult pet owners and non-pet owners in depression, systemic inflammation, and executive function. *Anthrozoos*, 29:2, 323-334.

Bruce, D. F. (n.d.). Do we actually transfer energy to other people when we touch? Retrieved from <https://www.sharecare.com/health/energy-boosters/transfer-energy-others-when-touch>

Burgoon, J. K., Buller, D. B., & Woodall, W. G. (1996). *Nonverbal communication : the unspoken dialogue* (2nd ed.). New York, NY: McGraw-Hill.

Burton, L. E., Qeadan, F., & Burge, M. (2018, October). Efficacy of equine-assisted psychotherapy in veterans with posttraumatic stress disorder. *Journal of Integrative Medicine*, 17 (1), 14-19. <http://dx.doi.org/10.1016/j.joim.2018.11.001>

Byrd, R. C. (1988, July). Positive Therapeutic Effects of Intercessory Prayer in a Coronary Care Unit Population. *Southern Medical Journal*, 81 (7), 826-829.

Carlson, M., & Earls, F. (1999). Psychological and Neuroendocrinological Sequelae of Early Social Deprivation in Institutionalized Children in Romania. In C. S. Carter, I. I. Lederhendler, & B. Kirkpatrick (Eds.), *The Integrative Neurobiology of Affiliation*. Cambridge, MA: MIT Press.

Cashar, L., & Dixon, B. (1967). The therapeutic use of touch. *Journal of Psychiatric Nursing*, Vol. 5 (5) , 442-451.

Chan, S. H. (1984, Spring). What is being stimulated in acupuncture: Evaluation of the existence of a specific substrate. *Neuroscience and Behavioral Reviews*, Vol 8: 1, 25-33.
[http://dx.doi.org/https://doi.org/10.1016/0149-7634\(84\)90018-6](http://dx.doi.org/https://doi.org/10.1016/0149-7634(84)90018-6)

Charnetski, C., Riggers, S., & Brennan, F. (2005, January). Effect of Petting a Dog on Immune System Function. *Psychological Reports*, 95 (3 pt 2), 1087-1091.
<http://dx.doi.org/10.2466/PR0.95.7.1087-1091>

Chen, C. W., Tai, C., Choy, C., Hsu, C., Lin, S., Chan, W. P., ... Leung, T. (2013, Nov. 7). Wave-Induced Flow in Meridians Demonstrated Using Photoluminescent Bioceramic Material on Acupuncture Points. *Evidence-Based Alternative and Complementary Medicine*, 1-11. <http://dx.doi.org/10.1155/2013/739293>

Chernin, D. K. (2002). *How to meditate using chakras, mantras and breath*. Ann Arbor, MI: Think Publishing.

Cioca, G. H., Giacomoni, P., & Rein, G. (2004). A Correlation Between GDV and Heart Rate Variability. In K. G. Korotkov (Ed.), *Measuring Energy Fields: Current Research*,). Fair Lawn, USA: Backbone Publishing Co.

- Cioca, G. H., Giacomoni, P., & Rein, G. (2004). A Correlation Between GDV and Heart Rate Variability. In K. G. Korotkov (Ed.), *Measuring Energy Fields: Current Research*, Fair Lawn, USA: Backbone Publishing Co.
- Clegg, B. (2013). 20 amazing facts about the human body. Retrieved from <https://www.theguardian.com/science/2013/jan/27/20-human-body-facts-science>
- Cocozza, P. (2018). No hugging: are we living through a crisis of touch? Retrieved from <https://www.theguardian.com/society/2018/mar/07/crisis-touch-hugging-mental-health-strokes-cuddles>
- Coffin, J. (2019, October 10). The Nguudu Barndimanmanha Project-Improving Social and Emotional Wellbeing in Aboriginal Youth Through Equine Assisted Learning. *Frontiers in Public Health*, 7 (278), 1-11.
- Cohen, S., & Popp, F. (1997, Sept). Biophoton emission of the human body. *Journal of photochemistry and photobiology*, 40 (2), 187-189.
- Cohen, S., Janicki-Deverts, D., & Miller, G. (2007, October 10). Psychological Stress and Disease. *Journal of the American Medical Association*, 298 (14), 1685-1687.
- Cohut, M. (2018). Hugs and kisses: The health impact of affective touch. Retrieved from <https://www.medicalnewstoday.com/articles/323143.php#1>
- Collinge, W. (1998). *Subtle Energy: Awakening to the Unseen Forces in Our Lives*. New York, NY: Grand Central Publishing.
- Colorectal Cancer Screening* [Medical Guideline]. (2007). Retrieved from [worldgastroenterology.org: https://www.worldgastroenterology.org/guidelines/global-guidelines/colorectal-cancer-screening/colorectal-cancer-screening-english](https://www.worldgastroenterology.org/guidelines/global-guidelines/colorectal-cancer-screening/colorectal-cancer-screening-english)

Complementary, Alternative, or Integrative Health: What's In a Name? (2018). Retrieved from

<https://nccih.nih.gov/health/integrative-health>

Coolman, R. (2014). What is classical mechanics? Retrieved from

<https://www.livescience.com/47814-classical-mechanics.html>

Cotter, M. (1997, February). Energetic Medicine and the Immune System. *Canada's Natural Health & Wellness Magazine*, 172, 25-26.

Custance, D., & Mayer, J. (2012, September). Empathic-like responding by domestic dogs

(*Canis familiaris*) to distress in humans: an exploratory study. *Animal Cognition*, 15:5, 851-859.

Dale, C. (2009). *The Subtle Body - An Encyclopedia of Your Energetic Anatomy*. Korea: Sounds True Inc.

Dale, C. (2018). *Complete Book of Chakras* (4th ed.). Woodbury, MN: Llewellyn Publications.

Dark Energy, Dark Matter. (n.d.). Retrieved from <https://science.nasa.gov/astrophysics/focus-areas/what-is-dark-energy>

de Waal, F. B., & Aureli, F. (1997, January 15). Conflict resolution and distress alleviation in monkeys and apes. *Annals of the New York Academy of Sciences*, 807, 317-328.

<http://dx.doi.org/10.1111/j.1749-6632.1997.tb51929.x>

Dell'Amore, C. (2011). Ancient Dog Skull Shows Early Pet Domestication. Retrieved from

<https://www.nationalgeographic.com/news/2011/8/110819-dogs-wolves-russia-domestication-animals-science-evolution/>

Deshpande, P. B., Korotkov, K., & Kowall, J. P. (2016, February). Bioenergy Measurements for

Predictive Medical Diagnosis. *Journal of Consciousness Exploration & Research*, 1-10.

- Ditzen, B., Neumann, I., Bodenmann, G., von Dawans, B., Turner, R. A., Ehlert, U., & Heinrichs, M. (2007, June). Effects of different kinds of couple interaction on cortisol and heart rate responses to stress in women. *Psychoneuroendocrinology*, 32 (5), 565-574. <http://dx.doi.org/10.1016/j.psyneuen.2007.03.011>
- Dobson, R. (2006). How the power of touch reduces pain and even fights disease. Retrieved from <https://www.independent.co.uk/life-style/health-and-families/health-news/how-the-power-of-touch-reduces-pain-and-even-fights-disease-419462.html>
- Dogs ease anxiety, improve health status of hospitalized heart failure patients. (2005). Retrieved from https://www.eurekalert.org/pub_releases/2005-11/aha-dea110705.php
- Drescher, V., Gantt, H., & Whitehead, W. (1980, November). Heart rate response to touch. *Psychosomatic Medicine*, Vol. 42 (6), 559-565. <http://dx.doi.org/10.1097/00006842-198011000-00004>
- Drouin, P. (2014). *Creative Integrative Medicine*. Bloomington, IN: Balboa Press.
- Druzhkova, A., Thalmann, O., Trifonov, V., Leonard, J. A., Vorobieva, N. V., Ovodov, N. D., ... Wayne, R. K. (2013, March). Ancient DNA Analysis Affirms the Canid from Altay as a Primitive Dog. *Plos ONE*, 8 (3)(), 1-6. <http://dx.doi.org/10.1371/journal.pone.0057754>
- Duranton, C., Bedossa, T., & Gaunet, F. (2017, September 28). Interspecific behavioural synchronization: dogs exhibit locomotor synchrony with humans. *Scientific Reports*, 7. <http://dx.doi.org/10.1038/s41598-017-12577-z>
- Edlund, D. M. (2003). *Reiki and its Effects on the Chakras, as Measured by the Aurastar Imaging Device* (Doctoral dissertation). Retrieved from https://opencommons.uconn.edu/uchcgs_masters/50

Electricity and electric currents. (n.d.). Retrieved from

https://www1.curriculum.edu.au/sciencepd/teacher/assessment/electricity/elec_currents.htm

Emery, C. (n.d.). The Origin of Life [Blog post]. Retrieved from

http://blog.hasslberger.com/docs/THE_ORIGIN_OF_LIFE-5.PDF

Emery, M. (2011, July). Life Force Energy [Blog post]. Retrieved from

http://blog.hasslberger.com/2007/04/mike_emery_enlightenment_and_t.html

Emery, M. (2013). Two Dimensions and Like Attracts Like [Blog post]. Retrieved from

http://blog.hasslberger.com/docs/TWO_DIMENSIONS_LIKE_ATTRACTS_LIKE.pdf

Emery, M. (2013, March). It is All About Conscious Awareness [Blog post]. Retrieved from

http://blog.hasslberger.com/docs/IT_IS_ALL_ABOUT_CONSCIOUS_AWARENESS.pdf

Energy. (n.d.). Retrieved from <https://en.wikipedia.org/wiki/Energy>

Equine Assisted Learning. (n.d.). Retrieved from <https://liftmeup.org/equine-assisted-learning>

Erickson, D. L., Fisher, D., Woelk, B., Buckner, W., & Ashley, C. (2016, June). A Mixed

Methods Study of Telepathic Interspecies Communication with Therapeutic Riding

Horses and their Recovering Wounded Veteran Partners. *NeuroQuantology*, 14 (2), 404-

427. <http://dx.doi.org/10.14704/nq.2016.14.2.953>

False Discovery Rate: Simple Definition, Adjusting for FDR. (2017). Retrieved from

<https://www.statisticshowto.com/false-discovery-rate/>

Fels, D. (2009, April 1). Cellular communication through light. *PLOS ONE*, 4 (4), 1-8.

Fels, D. (2016, March). Physical Non-Contact Communication between Microscopic Aquatic Species: Novel Experimental Evidences for an Interspecies Information Exchange.

Journal of Biophysics, 1-5.

Field, T., Hernandez-Reif, M., Diego, M., Schanberg, S., & Kuhn, C. (2005, October). Cortisol Decreases and Serotonin and Dopamine Increase Following Massage Therapy.

International Journal of Neuroscience, 115 (10), 1397-1413.

<http://dx.doi.org/10.1080/00207450590956459>

Fishman, E., Turkheimer, E., & DeGood, D. E. (1995, February). Touch relieves stress and pain.

Journal of Behavioral Medicine, 18, 69-79.

Fondin, M. (2018). The philosophy behind the chakras. Retrieved from

<https://chopra.com/articles/the-philosophy-behind-the-chakras>

Freedman, J. (2007). The Physics of Emotion. Retrieved from

<https://www.6seconds.org/2007/01/26/the-physics-of-emotion-candace-pert-on-feeling-good/>

Freund, I. (2016). Heart-to-Heart Connections with Horses are Not All That Sentimental.

Retrieved from <http://eponasoul.org/?p=132>

Friedman, E. (1995). The role of pets in enhancing human well-being: physiological effects. . In

I. Robinson (Ed.), *The Waltham Book of Human–Animal Interaction* (pp. 33-53). Oxford, UK: Pergamom Press.

Friedman, E., Katcher, A., Lynch, J., & Thomas, S. (1980, Jul-Aug). Animal companions and one-year survival of patients after discharge from a coronary care unit. *Public Health*

Report, 95 (4), 307-312.

Fujimura, C. K., & Nommensen, S. (2018). *Cultural Dimensions in Well-Being*. Lanham, MD: Lexington Books.

Gawlinski, A., & Steers, N. (2005). Dogs ease anxiety, improve health status of hospitalized heart failure patients. Retrieved from https://www.eurekalert.org/pub_releases/2005-11/aha-dea110705.php

Gerber, R. (2001). *Vibrational Medicine* (Third ed.). Rochester, Vermont: Bear & Company.

Gianaros, P. J., & Wager, T. D. (2015). Brain-Body Pathways Linking Psychological Stress and Physical Health. *Current Directions in Psychological Science*, Vol. 24:4, 313-321.
<http://dx.doi.org/DOI: 10.1177/0963721415581476>

Gordon, R. (2006). *Quantum-Touch: The Power to Heal*. Berkeley, CA: North Atlantic Books.

Gore, A. C. (2013). *Fundamental Neuroscience* (4th ed.). Waltham, MA: Academic Press.

Goswami, A. (2004). *The Quantum Doctor*. Charlottesville, VA: Hampton Roads Publishing Company, Inc.

Goswami, A. (2015). *Theoretical Principles of Integrative Medicine IW-701* [Video file].
Retrieved from <https://lms.iqum.org/mod/resource/view.php?id=11677>

Goswami, A. (n.d.). [Video File] New Quantum Biology for Medicine. Retrieved from <https://lms.iqum.org/mod/resource/view.php?id=11678>

Green, E. E., Green, A. M., & Walters, D. E. (1970, January 1). Voluntary control of internal states: psychological and physiological. *The Journal of Transpersonal Psychology*, 2: 1, 71-88.

Guizzardi, A. (n.d.). Human Energy Fields: Fritz Albert Popp. Retrieved from <http://www.alfonsoquizzardi.net/psiconalisi-energetico-vibrazionale/approfondimenti/human-energy-filds-fritz-albert-propp/>

- Hall, S., Wright, H. F., Hames, A., & Mills, D. (2016, May-June). The long-term benefits of dog ownership in families with children with autism. *Journal of Veterinary Behavior*, 13, 46-54. <http://dx.doi.org/10.1016/j.jveb.2016.04.003>
- Handlin, L., Hydbring-Sandberg, E., Nilsson, A., Ejdeback, M., Jansson, A., & Uvnas-Moberg, K. (2011, September). Short-term interaction between dogs and their owners: effects on oxytocin, cortisol, insulin and heart rate--an exploratory study. *Anthrozoos*, 24, 301-315.
- Harris, W., & Freudenrich, C. (2000). How light works. Retrieved from <https://science.howstuffworks.com/light.htm>
- Haun, J., Patel, N. R., Schwartz, G., & Ritenbaugh, C. (2015, June). Evaluating the use of gas discharge visualization to measure massage therapy outcomes. *Journal of Alternative and Complementary Medicine*, 12 (3), 231-239. <http://dx.doi.org/10.1515/jcim-2014-0014>
- Headey, B., & Grabka, M. (2007, April). Pets and Human Health in Germany and Australia: National Longitudinal Results. *Social Indicators Research*, 80 (2), 297-311. <http://dx.doi.org/10.1007/s11205-005-5072-z>
- Heffernan, K. (2017, April 3). The effect of an equine assisted therapy (EAT) programme on children's occupational performance -- a pilot study. *Irish Journal of Occupational Therapy*, 45 (1), 28-39. <http://dx.doi.org/10.1108/IJOT-02-2017-0005>
- Heppner, F. L., Ransohoff, R. M., & Becher, B. (2015, May). Immune attack: The role of inflammation in Alzheimer disease. *Nature Reviews Neuroscience*, 16 (6), 358-372. <http://dx.doi.org/10.1038/nrn3880>
- Hernandez-Reif, M., Field, T., Ironson, G., Beutler, J., Vera, Y., & Hurley, J. (2005, April 11). Natural killer cells and lymphocytes increase in women with breast cancer following

massage therapy. *International Journal of Neuroscience*, 115 (4), 495-510.

<http://dx.doi.org/10.1080/00207450590523080>

Hertenstein, M. J., Verkamp, J. M., Kerestes, A. M., & Holmes, R. M. (2006). The

Communicative Functions of Touch. *Genetic, Social, and General Psychology*

Monographs, 321 (1), 5-94.

Hilpern, K. (2008). When it's bad to talk. Retrieved from

<https://www.theguardian.com/society/2008/mar/11/mentalhealth.healthandwellbeing>

Jain, S., Hammerschlag, R., Mills, P., Cohen, L., Krieger, R., Vieten, C., & Lutgendorf, S.

(2015). Clinical Studies of Biofield Therapies: Summary, Methodological Challenges, and Recommendations. *Global Advances in Health Medicine*, 58-66.

<http://dx.doi.org/10.7453/gahmj.2015.34.supp>

Ji, S. (2017). Biophotons: The Human Body Emits, Communicates with, and is Made from

Light. Retrieved from [https://i-uv.com/biophotons-the-human-body-emits-communicates-with-and-is-made-from-](https://i-uv.com/biophotons-the-human-body-emits-communicates-with-and-is-made-from-light/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+IUv+%28I+UV%29&fbclid=IwAR1WApYRhHBh2j4QthsX6plKPIMUqUudGnqk4om6v_vIVNgE_mdewlJrjGA)

[light/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+IUv+%28I+UV%29&fbclid=IwAR1WApYRhHBh2j4QthsX6plKPIMUqUudGnqk4om6v_vIVNgE_mdewlJrjGA](https://i-uv.com/biophotons-the-human-body-emits-communicates-with-and-is-made-from-light/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+IUv+%28I+UV%29&fbclid=IwAR1WApYRhHBh2j4QthsX6plKPIMUqUudGnqk4om6v_vIVNgE_mdewlJrjGA)

Joseph, R. (2015). Quantum Physics of God: How Consciousness Became the Universe and

Created Itself. Retrieved from <http://cosmology.com/CosmicConsciousness.html>

Kabel, A., Kohsla, N., & Teti, M. (2015, October 2). The Dog Narratives: Benefits of the

Human–Animal Bond for Women With HIV. *Journal of HIV/AIDS & Social Services*, 14

(4), 405-416. <http://dx.doi.org/10.1080/15381501.2013.860069>

Kale, S. (2016). The Life of the Skin-Hungry: Can You Go Crazy from a Lack Of Touch?

Retrieved from https://www.vice.com/en_us/article/d3gzba/the-life-of-the-skin-hungry-can-you-go-crazy-from-a-lack-of-touch

Kang, O., Lee, W., & Jeong, K. (2013, December). Effects of Therapeutic Riding in Children with Spastic Cerebral Palsy. *Journal of Animal Science and Technology*, 55 (6), 559-565.

Katcher, A. (1981). Form and Function. In B. Fogle (Ed.), *Interrelations between people and pets*. (pp. 41-67). Springfield, IL: Charles C. Thomas.

Keeling, L. J., Jonare, L., & Lanneborn, L. (2009, July). Investigating horse-human interactions: The Effect of a Nervous Human. *The Veterinary Journal*, 181 (1), 70-71.

<http://dx.doi.org/10.1016/j.tvjl.2009.03.013>

Keller, B. (2019). Making Sense of Medicine: Biophotons: The light of life. Retrieved from

https://www.newburyportnews.com/news/lifestyles/making-sense-of-medicine-biophotons-the-light-of-life/article_3e22dadb-8d40-50de-a226-d91a829444e0.html

Khanam, S. (2017, August). Impact of stress on physiology of endocrine system and on immune system: a review. *Intl Journal of Diabetes & Endocrinology*, 2(3), 40-42.

<http://dx.doi.org/10.11648/j.ijde.20170203.12>

Kheifets, L., Rapacholi, M., Saunders, R., & van Deventer, E. (2005, September). The Sensitivity of Children to Electromagnetic fields. *Pediatrics*, 116 (2), E303-E313.

<http://dx.doi.org/10.1542/peds.2004-2541>

Kirk, C. P. (2019). Americans Like Dogs More Than Cats for One Simple Reason. Retrieved

from <https://www.inverse.com/article/54618-dogs-cats-why-americans-like-owning-one-pet-more>

Kirlian Effect. (n.d.). Retrieved from https://kirlianresearch.com/kirlian_principle.html

- Kivrak, E. G., Yurt, K. K., Kaplan, A. A., Alkan, I., & Altun, G. (2017, Oct-Dec). Effects of electromagnetic fields exposure on the antioxidant defense system. *Journal of Microscopy and Ultrastructure*, 5 (4), 167-176.
<http://dx.doi.org/10.1016/j.mau.2017.07.003>
- Klinghardt, D. (2019). *Body Electric Summit* (Kristine Shaffner, Interviewer) [Video]. Available from Health Talks Online.
- Kluger, J. (2018, July 20). How Dogs Think: Inside the Canine Mind . *Time*.
- Konstantin G. Korotkov, personal communication, April 4, 2020
- Koopman, F. A., Stoof, S. P., Straub, R. H., van Maanen, M. A., Vervoordeldonk, M. J., & Tak, P. P. (2011, September-October). Restoring Balance of the Autonomic Nervous System as an Innovative Approach to the Treatment of Rheumatoid Arthritis. *Molecular Medicine*, Vol. 17: (9-10), 937-948.
- Kopp, W. (2009, January). Chronically increased activity of the sympathetic nervous system: our diet-related "evolutionary" inheritance. *The Journal of Nutrition, Health and Aging*, Vol. 13 (1), 27-29. <http://dx.doi.org/10.1007/s12603-009-0005-1>
- Korotkov, K. (2014). *Energy Fields Electrophotonic Analysis in Humans and Nature* (2nd ed.). n.d.: Konstantin Korotkov.
- Korotkov, K. (2017). *The Energy of Health*. n.d.: Konstantin Korotkov.
- Korotkov, K., Shelkov, O., Shevtsov, A., Mohov, D., Paoletti, S., Mirosnichenko, D., ... Robertson, L. (2012). Stress Reduction with Osteopathy Assessed with GDV Electrophotonic Imaging: Effects of Osteopathic Treatment. *Journal of Alternative and Complementary Medicine*, 18 (3), 251-257.

- Kostyuk, N., Cole, P., Meghanathan, N., Isokpehi, R. D., & Cohly, H. H. (2011, May 19). Gas Discharge Visualization: An Imaging and Modeling Tool for Medical Biometrics. *International Journal of Biomedical Imaging*. <http://dx.doi.org/10.1155/2011/196460>
- Kovács , K., Virányi , Z., Kis, A., Turcsán , B., Hudecz , A., Marmota , M., ... Topál , J. (2018, April 5). Dog-Owner Attachment Is Associated With Oxytocin Receptor Gene Polymorphisms in Both Parties. A Comparative Study on Austrian and Hungarian Border Collies. *Frontiers in Psychology*, 9 (435). <http://dx.doi.org/10.3389/fpsyg.2018.00435>
- Krieger, D. (1975, May). Therapeutic Touch: The Imprimatur of Nursing. *The American Journal of Nursing*, Vol. 75 (5), 784-787.
- Kwon, S., Sung, I., Ko, E. J., & Kim, H. S. (2019, June). Effects of Therapeutic Horseback Riding on Cognition and Language in Children With Autism Spectrum Disorder or Intellectual Disability: A Preliminary Study. *Annals of Rehabilitative Medicine*, 43 (3), 279-288. <http://dx.doi.org/10.5535/arm.2019.43.3.279>
- Lanning, B. A., Wilson, A. L., Woelk, R., & Beaujean, A. (2018). Therapeutic horseback riding as a complementary intervention for military service members with PTSD. *Human-Animal Interaction Bulletin*, 6 (2). Retrieved from <https://www.apa-hai.org/human-animal-interaction/haib/therapeutic-horseback-riding-complementary-intervention-for-military-with-ptsd/>
- Letson, L. (2014). What makes horses so unique in therapy? Retrieved from <https://www.evergreenyfs.org/docs/annual-conference/annual-conference-2014-materials/Equine-Session-What-makes-horse-so-unique-in-therapy.pdf>

Light: Electromagnetic waves, the electromagnetic spectrum and photons. (n.d.). Retrieved from <https://www.khanacademy.org/science/physics/light-waves/introduction-to-light-waves/a/light-and-the-electromagnetic-spectrum>

Lin, C. D., Tona, F., & Osto, E. (2019, September 1). The crosstalk between the cardiovascular and the immune system. *Vascular Biology*, *1:1*, H83-H88.
<http://dx.doi.org/https://doi.org/10.1530/VB-19-0023>

Linden, D. J. (2015). *Touch: The science of hand, heart, mind*. New York, NY: Penguin Books.

Lindlahr, H. (1919). *Philosophy of Natural Therapeutics* (2nd ed.). Chicago, IL: The Lindlahr Publishing Co.

Liu, Y., Wang, Y., & Jiang, C. (2017, June 2). Inflammation: The Common Pathway of Stress-Related Diseases. *Frontiers in Human Neuroscience*, *11* (316), 1-11.
<http://dx.doi.org/10.3389/fnhum.2017.00316>

Longhurst, J. C. (2010, June). Defining Meridians: A Modern Basis of Understanding. *Journal of Acupuncture and Meridian Studies*, *Vol 3: 2*, 67-74.
[http://dx.doi.org/https://doi.org/10.1016/S2005-2901\(10\)60014-3](http://dx.doi.org/https://doi.org/10.1016/S2005-2901(10)60014-3)

Love as an Advanced Mode of Intelligence. (2016). Retrieved from <https://www.heartmath.org/articles-of-the-heart/love-advanced-mode-intelligence/>

Man O' War Project: About. (n.d.). Retrieved from <https://mowproject.org/about/the-project/>

Mancini, F., Beaumont, A., Hu, L., Haggard, P., & Iannetti, G. D. (2015, October). Touch inhibits subcortical and cortical nociceptive responses. *Pain: Journal of the Intl. Assoc. for the study of Pain*, *156* (10), 1936-1944.
<http://dx.doi.org/10.1097/j.pain.0000000000000253>

- Maxwell, R. (2009, December). Neurobiology of Chakras and Prayer. *Zygon*, Vol. 44: 4, 807-824.
- McCraty, R. (2015). Energetic Communication. In *Science of the Heart*, pp. 36-44). Boulder Creek, CA: HearthMath Institute.
- McCraty, R. (2015). *Science of the Heart*. Boulder Creek, CA: HeartMath Institute.
- McCraty, R., Atkinson, M., Tomasino, D., & Tiller, W. (1998). *Brain and values: Is a biological science of values possible*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Mcmaster, G. (2016). Researcher explores close prehistoric relationship between humans and dogs. Retrieved from <https://phys.org/news/2016-03-explores-prehistoric-relationship-humans-dogs.html>
- Mendoza, M. (n.d.). The 7 Chakras-- A Beginner's Guide to Your Energy System. Retrieved from <https://www.zenlama.com/the-7-chakras-a-beginners-guide-to-your-energy-system/>
- Mental health statistics: stress. (2018). Retrieved from <https://www.mentalhealth.org.uk/statistics/mental-health-statistics-stress>
- Meridian Connection. (n.d.). Retrieved from <https://www.tcmworld.org/what-is-tcm/meridian-connection/>
- Merkiesab, K., McKenchniea, M. J., & Zakrajseka, E. (2018, August). Behavioural and physiological responses of therapy horses to mentally traumatized humans. *Applied Animal Behaviour Science*, 205, 61-67.
- Miller, A. B., Sears, M. F., Morgan, L. L., Davis, D. L., Hardell, L., Oremus, M., & Soskolne, C. L. (2019, August 13). Risks to Health and Well-Being from Radio-Frequency Radiation Emitted by Cell Phones and Other Wirless Devices. *Frontiers in Public Health*, 7 (223). <http://dx.doi.org/10.3389/fpubh.2019.00223>

- Miller, Z. (2018). People have bonded with canines for centuries — and science can help explain why dogs are humans' best friend. Retrieved from <https://www.insider.com/dogs-humans-friendship-explained-2018-8>
- Milroy, M., & Khavkin, N. (2013, July). *Energy Measurements in Hawaii: Swimming with Dolphins & Visiting the Volcano*. Paper presented at the GDV Source International Wellness Symposium, Cinnaminson, NJ USA.
- Monroe, M., Whitworth, J. D., Wharton, T., & Turner, J. (2019, September 5). Effects of an Equine-Assisted Therapy Program for Military Veterans with Self-Reported PTSD. *Society & Animals*, 1-14. <http://dx.doi.org/10.1163/15685306-12341572>
- Montagu, A. (1986). *Touching: The Human Significance of the Skin* (3rd ed.). New York: Harper & Row.
- More Than Ever, Pets are Members of the Family. (2015). Retrieved from <https://theharrispoll.com/whether-furry-feathered-or-flippers-a-flapping-americans-continue-to-display-close-relationships-with-their-pets-2015-is-expected-to-continue-the-pet-industrys-more-than-two-decades-strong/>
- Morey, J. N., Boggero, I. A., Scott, A. B., & Segerstrom, S. C. (2015, Oct.). Current directions in stress and human immune function. *Current Opinion in Psychology*, Vol. 5, 1-11. <http://dx.doi.org/10.1016/j.copsyc.2015.03.007>
- Morrison, M. L. (2007). Health Benefits of Animal-Assisted Interventions. *Journal of Evidence-Based Complementary and Alternative Medicine*, (12:1), 51-62.
- Muehsam, D., Chevalier, G., Barsotti, T., & Gurfein, B. T. (2015). An overview of Biofield Devices. *Global Advances in Health & Medicine*, 4(supp), 42-51. <http://dx.doi.org/10.7453/gahmj.2015.022>

- Muldoon, A. L., Kuhns, L. M., Supple, J., Jacobson, K. C., & Garofalo, R. (2017, August 11). A Web-Based Study of Dog Ownership and Depression Among People Living With HIV. *JMIR Mental Health*, 4 (4) e:53. <http://dx.doi.org/10.2196/mental.8180>
- Muller, C. A., Schmitt, K., Barber, A. L., & Huber, L. (2015, March 2). Dogs Can Discriminate Emotional Expressions of Human Faces. *Current Biology*, 25:5, 601-605.
- Murphy, S. L., Xu, J., Kochanek, . D., & Arias, E. (2018, November). Mortality in the United States, 2017. *National Center for Health Statistics Brief*, 328, 1-8.
- Nagasawa, M., Mitsui, S., Es, N., Ohtani, N., Sakuma, Y., Onaka, T., ... Kikusui, T. (2015, April 17). Oxytocin-gaze positive loop and the coevolution of human-dog bonds. *Science*, 348 (6232), 333-336. <http://dx.doi.org/10.1126/science.1261022>
- Nawrocka-Rohnka, J., Marcinkowski , K., & Samborski , W. (2011). The impact of contact with a dog on the human body – A Literature Review. *Medical News (Russian Version)*, 80:2, 147-152.
- Nelson, F. (n.d.). Foundations of Integrative Medicine [Video]. Retrieved from <https://lms.iquim.org/mod/resource/view.php?id=11685>
- "Never Get Sick Again" / Dr. Bruce Lipton. [Video file]. (2019, May 29). Retrieved from https://www.youtube.com/watch?v=3YGKyJsH7fA&feature=youtu.be&fbclid=IwAR3NrI00MExIPr0HpmgeRdswTe_LY1M90cAbSH_bYbfYaNbGIYeYcK7h2_c
- Nonlocality and Entanglement . (n.d.). Retrieved from https://www.physicsoftheuniverse.com/topics_quantum_nonlocality.html
- Odendaal, J., & Meintjes, R. (2003, May). Neurophysiological Correlates of Affiliative Behaviour Between Humans and Dogs. *Veterinary Journal*, 165 (3), 296-301. [http://dx.doi.org/10.1016/s1090-0233\(02\)00237-x](http://dx.doi.org/10.1016/s1090-0233(02)00237-x)

- O'Haire, M. (2010, September/October). Companion animals and human health: Benefits, challenges, and the road ahead. *Journal of Veterinary Behavior*, 5, 226-234.
<http://dx.doi.org/10-1016/j.jveb.2010.02.002>
- Oschman, J., & Oschman, N. (2015). The heart as a bi-directional scalar field antenna. *Journal of Vortex Science and Technology*, 2:2, 2-4. <http://dx.doi.org/10.4172/2090-8369.1000121>
- Palley, L. S., O'Rourke, P. P., & Nieme, S. (2009, December). Mainstreaming Animal-Assisted Therapy. *ILAR Journal – Institute for Laboratory Animal Research*, 51 (3), 199-207.
<http://dx.doi.org/10.1093/ilar.51.3.199>
- PATH: Learn about EAAT. (n.d.). Retrieved from <https://www.pathintl.org/60-resources/efpl/1029-learn-about-eaat-equine-assisted-learning>
- Pet Industry Market Size & Ownership Statistics. (n.d.). Retrieved from https://www.americanpetproducts.org/press_industrytrends.asp
- Pet therapy: Animals as healers. (2008). Retrieved from <https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/pet-therapy/art-20046342>
- Petersson, M., Uvnas-Moberg, K., Nilsson, A., Gustafson, L., Hydbring-Sandberg, E., & Handlin, L. (2017, October 13). Oxytocin and Cortisol Levels in Dog Owners and their Dogs are Associated with Behavioral Patterns: An Exploratory Study. *Frontiers in Psychology*, 8, 1-8. <http://dx.doi.org/10.3389/fpsyg.2017.01796>
- Pomeranz, B., & Berman, B. (2003). *Basics of Acupuncture* (5th ed.).
http://dx.doi.org/https://doi.org/10.1007/978-3-642-18988-3_2
- Pop, D., Rusu, A. S., Pop-Vancia, V., Papuc, I., Constantinescu, R., & Mirsesan, V. (2014). Physiological effects of human-animal positive interaction in dogs - review of the literature. *Bulletin UASVM Animal Science and Biotechnologies*, 71(2), 102-110.

Potter, J., Evans, J., & Nolt, B. (1994). Therapeutic Horseback Riding. *Journal of the American Veterinary Medical Association*, 204, 131-133.

Powell, L., Guastallab, J., McGreevy, J., Bauman, A., Edwards, K. M., & Stamatakis, E. (2019, March-April). The physiological function of oxytocin in humans and its acute response to human-dog interactions: A review of the literature. *Journal of Veterinary Behavior*, 30, 25-32. <http://dx.doi.org/10.1016/j.jveb.2018.10.008>

Prothmann, A., Prothmann, S., & Ettrich, C. (2009, June). Preference for, and Responsiveness to, People, Dogs and Objects in Children with Autism. *Anthrozoos A Multidisciplinary Journal of The Interactions of People & Animals*, 22 (2), 161-171. <http://dx.doi.org/10.2752/175303709X434185>

Quantum physicists shed new light on relation between entanglement and nonlocality. (2012). Retrieved from <https://phys.org/news/2012-01-quantum-physicists-entanglement-nonlocality.html>

Radin, D., & Benton, A. (2005, June - Aug). Viewpoint. *Shift: Journal of the Institute of Noetic Sciences*, 7, 5-6.

Raia, P. (2018). How and Why Horses Help Veterans. Retrieved from <https://thehorse.com/162634/how-and-why-horses-help-veterans/>

Reinhardt, V., & Reinhart, A. (2017). *The Magic of Touch - Healing Effects of Animal Touch & Animal Presence* (2nd ed.). Washington, DC: Animal Welfare Institute.

ReShel, A. (2016). Science Finally Proves Meridians Exist. Retrieved from <https://upliftconnect.com/science-proves-meridians-exist/>

Riek, C., Seletsky, D., Moskalenko, A., Schmidt, J., Krauspe, P., Eckart, E., ... Leitenstorfer, A. (2015, October 23). Direct sampling of electric-field vacuum fluctuations. *Science*, 350 (6259), 420-423. <http://dx.doi.org/10.1126/science.aac9788>

Roberts, H., & Honzel, N. (2020, January). The Effectiveness of Equine-Facilitated Psychotherapy in Adolescents with Serious Emotional Disturbances. *Anthrozoos A Multidisciplinary Journal of The Interactions of People & Animals*, 33 (1), 133-144. <http://dx.doi.org/10.1080/08927936.2020.1694317>

Roberts, N. R., Shealy, C. N., & Tiller, W. A. (2004). Are There Electrical Devices that can Measure the body's Energy State Change to an Acupuncture Treatment. In K. Korotkov (Ed.), *Measuring Energy Fields: Current Research* (pp. 31-38). Fair Lawn, USA: Backbone Publishing Co.

Romaniuk, M., Evans, J., & Kidd, C. (2018, September 27). Evaluation of an equine-assisted therapy. *PLoS ONE*, 13:9, 1-15.

Ross, C. L. (2019, February 27). Energy Medicine: Current Status and Future Perspectives. *Global Advances in Health and Medicine*, 8, 1-10. <http://dx.doi.org/10.1177/2164956119831221>

Rovner, J. (2012). Pet Therapy: How Animals and Humans Heal Each Other. Retrieved from <https://www.npr.org/sections/health-shots/2012/03/09/146583986/pet-therapy-how-animals-and-humans-heal-each-other>

Russo, M., Choudhri, A. F., Whitworth, G., Weinberg, A. D., Bickel, W., & Oz, M. C. (2001, Dec 7). Quantitative Analysis of Reproducible Changes in High-Voltage Electrophotography. *Journal of Alternative and Complementary Medicine*, Vol 7: 6, 617-631. <http://dx.doi.org/10.1089/10755530152755162>

- S., N. (2019). The Shen: Understanding the Mind and Emotions in Chinese Medicine. Retrieved from <https://www.cityacu.net/blog/the-shen-understanding-the-mind-and-emotions-in-chinese-medicine>
- Sanders, C. L. (2014). Speculations About Bystander and Biophotons (Letter to the Editor). *International Dose-Response Society*, 12, 515-517. <http://dx.doi.org/10.2203/dose-response.14-002.Sanders>
- Schwabl, H., & Klima, H. (2005, April). Spontaneous ultraweak photon emission from biological systems and the endogenous light field. *Forsch Komplementärmed Klass Naturheilkd (Complementary Medicine Research)*, 12, 84-89. <http://dx.doi.org/10.1159/000083960>
- Seizure Alert Dogs. (n.d.). Retrieved from <https://k94life.org/seizure-alert/>
- Sense of Touch. (n.d.). Retrieved from <https://learning-center.homesciencetools.com/article/skin-touch/>
- Serpell, J. (1991, December). Beneficial effects of pet ownership on some aspects of health and behaviour. *Journal of the Royal Society of Medicine*.
- Serpell, J. A. (2010). *Handbook on Animal Assisted Therapy: Theoretical Foundations and Guidelines for Practice* (Third ed.). n.d.: n.d.
- Shang, C. (2001, Nov. 1). Emerging Paradigms in Mind-Body Medicine. *The Journal of Alternative and Complementary Medicine*, Vol. 7: 1, 83-91.
- Sharma, B., Hankey, A., & Nagendra, H. R. (2014, March). Gas Discharge Visualization Characteristics of an Indian Diabetes Population. *Voice of Research*, 2 (4), 28-33.
- Shelef, A., Brafman, D., Rosing, T., Weizman, A., Stryjer, R., & Barak, Y. (2019, September-October). Equine Assisted Therapy for Patients with Post Traumatic Stress Disorder: A

Case Series Study. *Military Medicine*, 84 (9-10), 394-399.

<http://dx.doi.org/10.1093/milmed/usz036>

Siegel, J. (1990). Stressful life events and use of physician services among the elderly: the moderating role of pet ownership. *Journal of Personality and Social Psychology*, 58 (6), 1081-1086.

Simoneaux, V. (n.d.). Heart-Brain Connection. Retrieved from

<https://quantumlifeforce.com/heart-brain-connection/#>

Smith, A. V., Proops, L., Grounds, K., Wathan, J., & McComb, K. (2016, February 1).

Functionally relevant responses to human facial expressions of emotion in the domestic horse (*Equus caballus*). *Biology Letters*, 12:2, 1-4.

Stafferton, B. (2019). How owning a horse can benefit your life. Retrieved from

<https://artofhealthyliving.com/how-owning-horse-can-benefit-your-life/>

Stefanov, M., Potroz, M., Kim, J., Lim, J., Cha, R., & Nam, M. (2013, December). The Primo Vascular System as a New Anatomical System. *Journal of Acupuncture and Meridian Studies*, 6 (6), 331-338. <http://dx.doi.org/10.1016/j.jams.2013.10.001>

Sterba, J. A., Rogers, B. T., France, A. P., & Vokes, D. A. (2002). Horseback riding in children with cerebral palsy: effect on gross motor function. *Developmental Medicine & Child Neurology*, 44, 301-308.

Strauss, M. (2015). What's the difference between dark matter and dark energy? Retrieved from

<http://mentalfloss.com/article/68083/whats-difference-between-dark-matter-and-dark-energy>

Stress. (2015). Retrieved from <https://my.clevelandclinic.org/health/articles/11874-stress>

- Sui, C. K. (n.d.). Chakra Balance is the Key to Harmony. Retrieved from <https://www.worldpranichealing.com/en/chakra/chakra-balancing/>
- Sundman, A., Van Poucke, E., Svensson Holm, A., Faresjö, Å., Theodorsson, E., Jensen, P., & Roth, L. S. (2019, June 6). Long-term stress levels are synchronized in dogs and their owners. *Scientific Reports*, 9. <http://dx.doi.org/10.1038/s41598-019-43851-x>
- Tate, K. (2013). How entanglement works. Retrieved from <https://www.livescience.com/28550-how-quantum-entanglement-works-infographic.html>
- Tate, K. (2014). Alternatives to the Big Bang Theory Explained (Infographic). Retrieved from <https://www.space.com/24781-big-bang-theory-alternatives-infographic.html>
- The Energy System of Animals. (n.d.). Retrieved from <http://www.bridges-to-animals.com/human-and-animal-energy-system.html>
- The Five Bodies of Consciousness. (n.d.). Retrieved from <https://quantumuniversity.com/qu/the-five-bodies-of-consciousness/>
- The science of heartmath. (n.d.). Retrieved from <https://www.heartmath.com/science/>
- Thiese, M. S., Ronna, B., & Ott, U. (2016, September). P value interpretations and considerations. *Journal of Thoracic Disease*, 8 (9), 928-931. <http://dx.doi.org/10.21037/jtd.2016.08.16>
- Thinking Allowed Productions. (2010, Aug 26). *Quantum Creativity (interview Dr. Goswami)* [Video file]. Retrieved from Quantum Creativity (excerpt)
- Thompson, A. (2019). Can Stress Kill You? Retrieved from <https://www.stress.org/can-stress-kill-you>
- Trembath, F., & Patterson-Kane, E. G. (2015). The effect of human-animal interaction on cardiovascular health. Retrieved from habricentral.org

- Trosper, J. (2014). If you needed proof that physics is really strange... Retrieved from <https://futurism.com/why-you-can-never-actually-touch-anything>
- Understanding the Stress Response. (2011). Retrieved from <https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response>
- Vagnoli, L., Caprilli, S., Vernucci, C., Zagni, S., Mugnai, F., & Messeri, A. (2014). Can Presence of a Dog Reduce Pain and Distress in Children during Venipuncture? *Pain Management Nursing*, 1-7. <http://dx.doi.org/10.1016/j.pnm.2014.04.004>
- Vey, G. (n.d.). Are humans really beings of light? Retrieved from <http://www.viewzone.com/dnax.html>
- Virues-Ortega, J., & Buela-Casal, G. (2006, January). Psychophysiological Effects of Human-Animal Interaction Theoretical Issues and Long-Term Interaction Effects. *The Journal of Nervous and Mental Disease*, 194, 52-57.
- Vitality. (2012). In *Definitions*. Retrieved from <https://www.dictionary.com/browse/vitality?s=t>
- Vithoulkas, G. (1980). *The Science of Homeopathy*. New York, NY: Grove Press.
- Vivo, M. (2011). An Interview with Dede Beasley, Equine Therapist at The Ranch. Retrieved from <https://www.recoveryranch.com/addiction-blog/equine-therapist-interview/>
- Vormbrock, J. K., & Grossberg, J. M. (1988, October). Cardiovascular effects of human-pet interactions. *Journal of Behavioral Medicine*, 11 (5), 509-517.
- W., M. (2012). Can Objects Touch. Retrieved from <https://van.physics.illinois.edu/qa/listing.php?id=20935&t=can-objects-touch>
- Wagner, S. (2010). The energy of the human-animal bond. Retrieved from <http://veterinarycalendar.dvm360.com/energy-human-animal-bond-proceedings>

- Ward, S. C., Whalon, K., Rusnak, K., Wendell, K., & Paschall, N. (2013, February). The Association Between Therapeutic Horseback Riding and the Social Communication and Sensory Reactions of Children with Autism. *Journal of Autism and Developmental Disorders volume , 43*, 2190-2198. <http://dx.doi.org/10.1007/s10803-013-1773-3>
- Wedderburn, P. (2018). Medical Detection Dogs – the science behind the sniff. Retrieved from <https://www.telegraph.co.uk/pets/news-features/medical-detection-dogs-science-behind-sniff/>
- What are biophotons? (n.d.). Retrieved from <http://www.biontology.com/what-are-biophotons-2/>
- What is AAT/AAA? (n.d.). Retrieved from <https://www.animaltherapy.net/what-is-aataaa/>
- What is Hippotherapy? (n.d.). Retrieved from <https://americanhippotherapyassociation.org/what-is-hippotherapy/>
- What is Subtle Energy? (n.d.). Retrieved from <http://energyforhealing.com/what-is-subtle-energy/>
- Wheels of Life ~ Our Magnetic Energy System. (n.d.). Retrieved from <https://www.souledout.org/healing/wheelsoflife/chakrasinfo/magneticchakras.html>
- Wilczek, F. (2016, April 28). Entanglement made simple. *QuantaMagazine*. Retrieved from <https://www.quantamagazine.org/entanglement-made-simple-20160428/#>
- Wilson, C. (1987, October). Physiological responses of college students to a pet. *Journal of Nervous and Mental Disease, 175 (10)*, 606-612.
- Winchester, P., Kendall, K., Peters, H., Sears, N., & Winkley, T. (2002). The effect of therapeutic horseback riding on gross motor function and gait speed in children who are developmentally delayed. *Physical & Occupational Therapy in Pediatrics, 22 (3-4)*, 37-50. http://dx.doi.org/10.1080/J006v22n03_04

- Yakovleva, E. G., Buntseva, O. A., Belonosov, S. S., Federov, E. D., Korotkov, K., & Zarubina, T. V. (2015). Identifying Patients with Colon Neoplasias with Gas Discharge Visualization Technique. *Journal of Alternative and Complementary Medicine*, 21, 720-724. <http://dx.doi.org/10.1089/acm.2014.0168>
- Zimmermann, K. A. (2018). Endocrine System: Facts, Functions and Diseases. Retrieved from <https://www.livescience.com/26496-endocrine-system.html>