Prepared by: Energy Tools International LLC
Date: April 2013
Conducted and reported by: Dr. Jeff Marrongelle, D.C., C.C.N.

Interaction of VFT Frequency Patterns with the Human Body.

Heart Rate Variability Testing.

In the initial test, four solutions were prepared in a base liquid containing identical concentrated trace mineral solutions. Each of the four solutions were then infused with the following specific VFT frequency patterns (VFT formulas); *Foundation, Stress Relief, Immune Support* and *Thymus.* Throughout the course of the trial period, each patient received an *HRV Pre-Test* (Heart Rate Variability), to determine the patient's current physical condition*, followed by a basic EAV/EDS (Electro-Acupuncture According to Dr. Voll/Electro-Dermal Screening) using the Avatar Testing System assessment of the functional level of the body's primary meridians. The EAV assessment tested the 21-left/right paired, standard "Voll" end points to determine which of the four solutions had the broadest effect in "*balancing*" the patient's acupuncture meridians and their entire body's system.

Each patient then received a single, low-dose application of 2 to10 drops of the appropriate VFT formula diluted in 6 oz of water. Dosing was followed by a second Heart Rate Variability test to measure the change in the HRV parameters regarding the patient's physiology.

The HRV pretest is used to determine the current condition of the patient (establishing a baseline). The HRV post-test confirms a treatment program's probability of success. The potentiality of success is measured by analyzing the data of changes after dosing. Successful therapies typically showed an immediate positive shift in the HRV ratings after dosing.

Further to make a more accurate assessment of the VFT patterns influence and to determine what types of patients responded most effectively to VFT pattern stimulation, the patients were grouped by duration and severity of their condition. The intake exam for the patients included a complete lifetime case history of all traumas, infections, injuries, emotional stressors, and their current physiological, psychological, and emotional states. Many had suffered a lifetime of illness, ineffectively dealing with stressors in their life, whether from chemical, environmental, physical, mental, or emotional causes.

These patients were categorized by their initial HRV exam into three primary groups according to their level of autonomic stress: Acute, Intermediate and Chronic/Degenerative. In the final test, ten VFT formulas were consisting of: Acute Immune, Foundation, GI Aid, Harmony, Immune Support, Rejuvenation, Stress Relief, Thymus, Tranquility and Clear Mind.

Discussion of Results

By the end of week two of the test period, analysis of repeated HRV tests consistently demonstrated that only a few drops of a VFT formula could considerably improve HRV values within minutes. There seemed to be a powerful autonomic nervous system response demonstrated in the HRV post-tests. Almost every patient had significant, observable, positive shifts in most of their HRV measurements. Even patients with a long history of unresponsiveness to most treatment modalities showed significant, positive responses which previously were difficult to achieve.

As a secondary method to further validate and substantiate these initial results, to verify the effect of the VFT formulas and eliminate the possibility of a placebo effect, uninfused carrier solution samples were used as a control. A standard HRV pre-test was conducted on each patient. Patients received a dose of the uninfluenced carrier solution to see if it had any significant effect by itself, followed by an HRV post-test . The results of the post-tests using the uninfused solution, verified conclusively that there was no consistent positive or negative influence.

A sizeable database on the physiological effects of the VFT formulas on the Autonomic Nervous System was created by following this protocol repeatedly. Over time, quantifiable patterns of influence began to emerge. Dramatic, rapid shifts occurred in many or all the measurements obtained through these HRV tests. Ninety percent of the case study patients experienced significant, positive measurable results while only eight percent of the patients showed minimal responses or no shift at all. Less than two percent of the patients experienced negative shifts in any of the HRV measurements, and these decreases were never significant.

It should be noted that prior to dosing with VFT formulas, many of these patients had experienced significant negative responses to therapy involving vitamins, minerals, homeopathy, herbs, pharmaceuticals, chiropractic adjustment, massage, laser treatment, electrical stimulation, and magnetic therapy. These formulas showed a clearly advantageous effect on most patients with conditions previously unresponsive to treatment.

Chronic-Degenerative Case Studies

Chronic-Degenerative patients generally suffer from severe conditions such as fibromyalgia, multiple sclerosis, lupus, cancer, diabetes, arthritis, etc. These cases tend to be the most difficult conditions to treat.

Chronic-Degenerative cases most frequently required the use of Rejuvenation or Foundation formulas. Very often, in long-standing chronic cases, patients developed a psychological/emotional syndrome, which at some point evolved to protect the individual from severe damage of the long term, chronic condition. Therefore, the underlying emotional adaptation in these cases may need to be addressed first. They most often required the use of Tranquility and Thymus formulas.

Initial testing showed changes of up to 25% in the myocardial response, along with decreases or elevations in heart rate (whichever response was a movement towards normal) as well as improvements in the tension index and the total power of high frequency and low frequency stimulation from the brain to the myocardium.

In this example, the patient had suffered for 5 years from complications resulting from cancer radiation therapy of the throat. Dosing with 10 drops of Harmony in 6 oz. of water resulted in an immediate and significant positive change in his standing heart rate, which had been chronically depressed. After of using of the VFT pattern this patient's blood pressure dropped from 170/110 down to 150/90. It should be noted that prior to therapy with the VFT solutions, this patient had undergone over 30 consecutive heart rate studies (halter monitor). After demonstrating consistently abnormal cardio/neurological responses, he exhibited for the first time, after only one dose of Harmony, significant improvement in cardiac response (blood pressure) as well as normal physiological response in autonomic functional balance as reflected by HRV testing.

Bruce R.			
Male. 63 years old. Condition – Neurogenic dysautonomia due to radiation of the throat, damaging carotid baro and chemo receptors. Received radiation in 1997 for cancer of the throat.			
Posttest— A few minutes after dose of 11 drops of Harmony			
	Pre-test	Post-test	Difference
Heart Rate – *supine*	**54**	**60**	**+ 6**
Heart Rate – *upright*	**52**	**75**	**+23/VS**
Tension Index – *supine*	**145**	**55**	**+ 90/VS**
Tension Index – *upright*	**200**	**145**	**+ 55/VS**
Optimum Variability (POV) - *supine*	13	11	+ 2
Optimum Variability (POV) - *upright*	**10**	**14**	**+ 4**
CHMR	**.92**	**1.04**	**- 12**
Vascular Compliance	**.89**	**1.28**	**- 39/VS**
Current Physical Fitness	9.7	9.7	NC
Adrenal Response	Yes	Yes	NC
Parasympathetic	**-2.5**	**-1.0**	**+ 1.5**
Sympathetic	**-2.5**	**.5**	**+ 3.0/VS**

+ = Positive change/movement towards normal parameters
- = Negative shift/movement away from normal parameters
VS = Very significant NS = Not statistically significant
NC = No Change

Intermediate Case Studies

Patients in the *Intermediate* category suffered from psychological and physical conditions such as depression, intermittent fatigue ranging from mild to moderate, major disease in minor organs or minor disease in major organs (high blood pressure, neurological symptoms, controlled diabetes, pain syndromes, etc.). These individuals had significant overall energy deficiency, though they did have some reserve capacity which, when it becomes unblocked can help the body respond normally and rapidly to more standard interventions.

Intermediate cases usually required the use of Stress Relief combined with Immune Support, Foundation or Rejuvenation. Positive changes in heart rate and energy response corresponded with acknowledged physical change. This outcome is demonstrated in the following case study, which involved a 49-year-old woman who was athletic but suffered from Multiple Sclerosis. The patient walked into the office with two leg braces and a pelvic brace and was having substantial difficulty walking. After one dose with two VFT formulas—Rejuvenation and Foundation—she walked out of the office on her own, without any braces. Within a week, she played 18 holes of golf, walking the full course.

Marg D.			
Female. 49 years old. Athletic. Condition – MS, severe neurogenic synaptic dyskinesia, gait disorder.			
Post-test— A few minutes after dosing with 5 drops each of Rejuvenation & Foundation in 6 oz of water			
	Pre-test	Post-test	Difference
Heart Rate – *supine*	65	56	**+9**
Heart Rate – *upright*	77	65	**+12**
Tension Index – *supine*	90	82	**+8**
Tension Index – *upright*	53	21	**+32/VS**
Optimum Variability (POV) - *supine*	31	32	NS
Optimum Variability (POV) - *upright*	28	30	NS
CHMR	.66	.64	NS

Vascular Compliance	.72	.78	**+6**
Current Physical Fitness	5.4	5.4	NC
Adrenal Response	Yes	Yes	NC
Parasympathetic	.5	.5	NC
Sympathetic	.5	.5	NC

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Acute Case Study

Acute patients were those suffering from recent injuries, infections, or personal emotional loss. These patients had conditions such as recent, severe dental pain, an infection or recent physical trauma resulting from an accident or an injury. Others were suffering from severe emotional trauma such as a recent divorce, the loss of a loved one, loss of a job, severe financial strain, or a combination of these.

Acute conditions typically responded to *Acute Immune* stimulation combined with *Harmony* or *Stress Relief*. In some cases, heart rates dropped up to 30 beats per minute within fifteen minutes after dosing. These remarkable results could in part be attributed to pain relief, resulting in a decrease of cardiac stimulation from the nervous system.

In the following study the patient was experiencing recent symptoms from an acute dental infection. It should be noted that the patient was under long-term care for CFIDS (Chronic Fatigue):

Jeffrey B.			
Male. 28 years old. Condition – Long-term care patient for CFIDS. CFIDS condition stable and in remission. Experiencing acute dental infection with purulent exudates and sinusitis.			
Post-test – A few minutes after dose of *Harmony* and *Acute Immune*			
	Pre-test	Post-test	Difference
Heart Rate – *supine*	55	51	+4
Heart Rate - *upright*	**68**	**61**	**+7**
Tension Index - *supine*	**71**	**29**	**+42**
Tension Index - *upright*	**233**	**42**	**+191/VS**
Optimum Variability (POV) - *supine*	**29**	**37**	**+8**

Optimum Variability (POV) - *upright*	**14**	**31**	**+17/VS**
CHMR	**.65**	**.58**	**+8/VS**
Vascular Compliance	**.80**	**.69**	**+11/VS**
Current Physical Fitness	**8.4**	**3.2**	**+5.2/VS**
Adrenal Response	YES	YES	NS
Parasympathetic	**0**	**1.0**	**+1**
Sympathetic	0	0	NS

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Additional Case Studies Use of Acute Immune + Harmony

Chronic-Degenerative

In this patient's case, the two VFT formulas—Harmony and Acute Immune—induced relaxation of the sympathetic tone even in the presence of morphine medication. All changes in this case are very substantial due to the significant regulatory blockage induced by morphine. Due to the long-term degenerative condition, the patient perceived about a 15% improvement in lowering the level of pain although the numbers indicated a much greater level of general improvement.

Joel M.			
Male. 21 years old. Condition – Severe, degenerative rheumatoid arthritis for 7 years. From head to foot, skin very painful to the touch. Implanted morphine pump. Deep psychological trauma resulting from continuous pain. Experiencing sleep disturbances and occasional hallucinations.			
Post-test— A few minutes after dose of *Harmony* and *Acute Immune*			
	Pre-test	Post-test	Difference
Heart Rate – *supine*	50	48	NS
Heart Rate - *upright*	**105**	**93**	**+ 12**
Tension Index - *supine*	24	29	NS
Tension Index - *upright*	**415**	**71**	**+ 344/VS**

Optimum Variability (POV) - *supine*	32	31	NS
Optimum Variability (POV) - *upright*	**8**	**22**	**+ 14/VS**
CHMR	.40	.40	NS
Vascular Compliance	.82	.78	+4
Current Physical Fitness	**9.1**	**5.1**	**+ 4**
Adrenal Response	Yes-A lot	Yes-A lot	NS
Parasympathetic	.5	.5	NS
Sympathetic	**1.5**	**0**	**+ 1.5**

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Chronic-Degenerative

In this patient's case the two VFT formulas—Harmony and Acute Immune—broke the inflammation pattern of her dental condition and initiated positive changes in resting heart rate. After the initial treatment, she felt hungry enough to eat a whole meal for the first time in six months. Her mental/emotional state improved, and she returned to normal eating patterns. After 2 follow-up visits, she had maintained this appetite stability.

Helen B			
Female. 63 years old. Condition – Bell's Palsy, nausea, weight loss, depression, extreme fatigue. Chronic tachycardia. Allergic reaction to dental material.			
Post-test— A few minutes after dose of 9 drops each of Harmony & Acute Immune in 6 oz of water			
	Pre-test	Post-test	Difference
Heart Rate - *supine*	108	88	**+20/VS**
Heart Rate - *upright*	127	99	**+28/VS**
Tension Index - *supine*	--	--	**--**
Tension Index - *upright*	840	736	**+104/VS**
Optimum Variability (POV) - *supine*	3	1	NS
Optimum Variability (POV) - *upright*	0	1	NS

CHMR	.83	.89	NS
Vascular Compliance	.93	.96	NS
Current Physical Fitness	11.7	11.7	NC
Adrenal Response	No	No	NC
Parasympathetic	4.0	-3.5	**+7.5/VS**
Sympathetic	3.5	2.5	**+1**

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Intermediate

In this patient's case, the two *VFT formulas —Harmony* and *Acute Immune*—influenced significant positive shifts in all parameters with significant drops in heart rate. These physiological improvements also attributed to a significant reduction of the inflammatory response. The patient reported minimal dental pain and an overall increase in perceived energy as well as systemic relaxation.

Barton H.			
Male. 52 years old. Condition – Chronic fatigue along with a six-months duration of gingival pain syndrome following dental surgery.			
Post-test – A few minutes after dose of *Harmony* and *Acute Immune*			
	Pre-test	Post-test	Difference
Heart Rate – *supine*	**88**	**73**	**+ 15/VS**
Heart Rate – *upright*	**103**	**79**	**+24/VS**
Tension Index – *supine*	**610**	**213**	**+397/VS**
Tension Index – *upright*	**739**	**320**	**+419/VS**
Optimum Variability (POV) - *supine*	**1**	**11**	**+10/VS**
Optimum Variability (POV) *– upright*	**0**	**5**	**+5**
CHMR	.78	.79	NS
Vascular Compliance	.90	.84	+ 6
Current Physical Fitness	**11.6**	**9.6**	**+2**
Adrenal Response	Yes	Yes	NS

Parasympathetic	**-4.0**	**-2.0**	**+2/VS**
Sympathetic	**2.5**	**1.0**	**+1.5/VS**

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Intermediate

In this patient's case, the two VFT formulas—Harmony and Acute Immune—influenced a significant and immediate pain reduction. This pain was caused from inflammation in the mouth due to an infected tooth.

Michele K			
Female. 28 years old. Condition – Acute pain. Acute Dental Condition from an infected tooth.			
Post-test— A few minutes after dose of 7 drops each of Harmony & Acute Immune in 6 oz of water			
	Pre-test	Post-test	Difference
Heart Rate - *supine*	64	60	NS
Heart Rate - *upright*	72	68	NS
Tension Index - *supine*	73	172	**+99/VS**
Tension Index - *upright*	115	134	**+19**
Optimum Variability (POV) - *supine*	25	24	NS
Optimum Variability (POV) - *upright*	14	29	**+15/VS**
CHMR	.64	.58	**+6**
Vascular Compliance	.65	.65	NC
Current Physical Fitness	5.3	6.3	NS
Adrenal Response	--	--	--
Parasympathetic	-.5	-.5	NC
Sympathetic	.5	.6	NS

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Chronic - Degenerative

In this patient's case, the two VFT formulas, Clear Mind and Acute Immune influenced significant neurological improvements. The patient remarked on a substantial increase in vitality and energy, her sleeping disorder improved immediately to the point of returning to restful sleep and feeling refreshed upon waking up. Her HRV results showed nearly unbelievable improvement in cardiac function and efficiency.

Pat M.			
Female: 57 years old. Condition – chronic fatigue syndrome and Lime's Disease, Sleep Apnea.			
Post-test— A few minutes after dose of 10 drops each of Clear Mind & Acute Immune in 6 oz of water			
	Pre-test	Post-test	Difference
Heart Rate - *supine*	69	58	**+11 /VS**
Heart Rate - *upright*	72	64	+8
Tension Index - *supine*	279	47	**+232 /VS**
Tension Index - *upright*	788	108	**+680 /VS**
Optimum Variability (POV) - *supine*	11	27	**+16 /VS**
Optimum Variability (POV) - *upright*	1	25	**+24 /VS**
CHMR	.82	.75	**+7**
Vascular Compliance	.83	.81	**NS**
Current Physical Fitness	10.6	6.5	**VS**
Adrenal Response	--	Yes	**VS**
Parasympathetic	-2.5	0	**VS**
Sympathetic	0.5	-0.5	NS

+ = Positive change/movement towards normal parameters
VS = Very significant NS = Not statistically significant

Conclusions

The most interesting observation after final review, was that the influence of the VFT formulas, regardless of the category or condition, Chronic-Degenerative, Intermediate or Acute, was consistent in the positive responses across the board.

Positive shifts were observed in most of the HRV parameters, particularly in the relationship of Sympathetic to Parasympathetic responses. It should be noted that in cases where the Parasympathetic and Sympathetic values fall in the normal range, changes in these values tend to not occur, however, significant improvements were consistently registered in other key HRV values. Shifts in heart rate, myocardial response, high frequency and low frequency neurological function, total power and vascular compliance were observed repeatedly. Positive reactions in reserve capacity and physical fitness measurements were also seen consistently. Currently, the results of hundreds of similar case studies including long-term therapy results are being categorized for statistical analysis.

Appendix A

Heart Rate Variability used as a Testing Tool

Heart Rate Variability (HRV) is a computerized, qualitative assessment of the functional level of the Autonomic *Nervous System* (ANS). HRV was developed in scientific, medical research conducted in Russia, Germany, France, and the United States over the last 30 years. For patient testing, Dr. Marrongelle uses the Nerve Express HRV Testing System, created by Dr. Alexander Rifting, Ph.D. The Nerve Express HRV Testing System is a "leading edge" yet practical example of modern day HRV technology. The Nerve Express/ Health Express Testing System utilizes advanced statistical/spectral analysis and "artificial intelligence" computer math models to analyze the relationship of heartbeat time interval variance (from heartbeat to heartbeat) to ANS functional levels and to the body's overall functional health. Testing conducted at the Columbia University Medical Center confirmed the Nerve Express/Health Express HRV Testing System to be over 95% reliable and accurate in its assessment of the ANS compared to HRV industry standards.

As a functional assessment tool, the Nerve Express HRV Testing System is non-invasive and relatively simple to use. Two HRV tests are performed on each patient—one prior to electrodermal screening and one after dosing. The patient lies down for the first portion of the test. This is followed by a one-minute stress period in which the patient stands up quickly and remains standing for the final portion of the test. The total test duration is about 6 to 7 minutes.

The test reflects many components: measurements in heart rate resting and standing, the relationship of sympathetic to parasympathetic response, myocardial response, adrenal response, high frequency and low frequency neurological function, total power, vascular compliance, reserve capacity and overall physical fitness. These measurements are shown on the screen as two reports: *NERVE EXPRESS* and *HEALTH EXPRESS*.

The *NERVE EXPRESS* report is used to evaluate the entire Autonomic Nervous System, the functional nervous system of the body that controls the variability of one's heart rate. The ANS has two components: the *sympathetic* and *parasympathetic* nervous systems. The report indicates how the sympathetic and parasympathetic autonomic systems control myocardial responses in positional stress.

Each system's strength is plotted on an x/y axis to show the relationship of sympathetic to parasympathetic control. There are 64 possible relationships between the two components. The

clinical objective is to administer a *predictable* intervention of sympathetic or parasympathetic tone towards a more positive state of balance. The functional state of the ANS is relative to the patient's present clinical condition and it is invaluable for the modern clinician to have a thorough, working knowledge of the autonomic response.

The *HEALTH EXPRESS* function of HRV testing reports several parameters regarding functional health:

1. *General Fitness Level* – measures the body's overall physical fitness level and adaptive reserves based upon the patient's ANS. The ANS is responsible for the coordination and maintenance of an individual's ability to sustain energy and perform work. The overall *Physical Fitness Level* is separated into several parameters.

2. The *Physiological Functional Level* is a representation of the general level of vitality or the level of fatigue.

3. The *Adaptive Reserve* is a functional representation of the body's ability to sustain work and cope with stress. This stress can include emotional and psychological stress, physical exertion, the stress of an illness or even the stress or treatment program.

4. The *Physical Fitness Level* is depicted by a graph measuring 13 *Physiological Functional Levels* (horizontal axis) by 7 levels of *Physiological Functional Level* (vertical axis). The functional level indicates the current energy status of the body from an optimal value of 1.1 ([1] indicating the *Physiological Functional Level* and [.1] the *Physiological Functional Level*) to 13.7 being the poorest value ([13] for the Physiological Functional Level and [7] for the *Physiological Functional Level*). This analysis allows the clinician to categorize the patient according to the amount of available energy to *heal*. How well one can regenerate and recover from whatever stress load he or she is under is a dynamic dependent upon energy. One can have all the essential material in the body—all the appropriate nutrients, herbs, homeopathic solutions, etc.—yet lack the vital force to organizationally utilize all those materials. Therefore, this measurement along with the patient's initial response to any type of therapeutic intervention can be used as a good indicator of the most appropriate course of clinical treatment.

5. *Heart Rate* (HR) reading – indicates the Heart Rate per minute. Both the resting and standing Heart Rate are given along with an average of the two.

6. *Tension Index* (TI) – determines the tension of HRV regulation mechanisms. It is an integral index of *decrease* in variability. TI measurements range from 10 - 10,000.

7. *Parameters of Optimum Variability* (POV) – shows quantitatively how close an individual's HRV wave image is to the ideal. This parameter defines the deviations of a patient's variability from the ideal variability for both the supine and upright positions. This may range from a low of "0" (poor variability or no variability beat-to-beat) to a high of "38" (the most physically fit individuals ever tested).

8. *Chronotropic Myocardial Response* index (CHMR) – evaluates the level of cardiac adaptation reserves. Measurements range from a high chronotropic reaction of < 0.53 to a normal chronotropic reaction of 0.53 - 0.69 to a sharp decrease in reaction of > 0.81.

9. *Vascular Compliance* (VC) – reflects pliability or compliance of the vascular system. A patient's VC should be equal to or greater than CHMR and a VC of 10% greater than CHMR is considered normal.