Stress   Bioenergy Disruptions   Telomeres Shortening

Pradeep B. Deshpande[*1] Konstantin Korotkov[2], and James P. Kowall[3]

[1]Professor Emeritus of Chemical Engineering, University of Louisville, & Six Sigma & Advanced Controls, Inc., Louisville, KY 40222 USA

[2]Professor of Biophysics and Computers, St. Petersburg Technical University of Information technologies, Mechanics, and Optics, St. Petersburg, Russia

[3]James Kowall, MD (Neurology, Internal Medicine), PhD (Theoretical Physics), Eugene, Oregon, USA

Abstract

The Bioenergy field of seven individuals known to be suffering from chronically high stress levels was measured with a gas discharge visualization (GDV) device revealing that their bioenergy fields were severely disrupted recording high to very high numerical values of stress levels and their chakras were severely off-balance. Stress is known to be a biomarker of a number of ailments and has been shown to have a negative effect on aging. The GDV method has advantages over other methods such as testing for telomeres levels and telomeres lengths in that it is completely noninvasive, painless, taking only a few minutes per sample to complete and this offers prospects for large-scale investigations. Since meditation has been shown to reverse the negative effect of stress, the information reported nicely supplements and complements traditional medical approaches to illnesses and should be useful in the light of the ever-increasing healthcare costs, now $2.7 trillion per year and rising.

Keywords: stress, bioenergy, telomeres, aging, sickness, meditation.

Significance

High levels of stress levels has been shown to shortening of telomeres length and lowering of telomeres levels with an adverse effect on aging as well as variety of ailments but the measurement requires the analysis of blood samples. Disruptions in our bioenergy levels are suggested to occur well before the negative effect of stress are manifested in the form of telomeres shortening and lowering of telomerase levels and subsequent ailments. A gas discharge visualization device measures the bioenergy, stress levels, and the state of chakras and this measurement is painless, noninvasive, and nearly instantaneous and therefore can be potentially used in large-scale studies. The telomeres research group as well as bioenergy research group have shown the restorative effects of meditation upon health and here GDV should help as feedback mechanism in self-help programs.

[*] Correspondence: Prof. Pradeep B. Deshpande, Six Sigma & advanced Controls, Inc., 1209 Holsworth Lane, Louisville, KY 40222, http://www.sixsigmaquality.com E-mail: pradeep@sixsigmaquality.com

Introduction

High levels of stress are known to cause a number of ailments and accelerates ageing (Epel, et al., 2004). Developing restorative methods to slow down or even reverse the negative effects of stress on health consists of two parts: (1) To find reliable methods of measuring stress levels, and (2) Develop methods to reverse the negative effects of stress and demonstrate their efficacy with the measurement methodology in (1).

Elizabeth Blackburn and associates discovered in the seventies that the tips of human chromosomes called telomeres act as a shield to protect the end of our chromosomes each time our cells are divided and the DNA is copied. They also discovered that an enzyme called telomerase can protect and rebuild telomeres. As we age, telomere dwindles and when they get too short, our cells malfunction and lose their ability to divide, a key process in aging. This work eventually earned Dr. Blackburn the 2009 Nobel Prize in physiology and medicine (http://www.cnn.com/2014/07/10/health/can-meditation-really-slow-aging/).

Elissa Epel subsequently collaborated with Blackburn showing that telomerase levels and telomeres length are strongly correlated with stress levels and that they affect aging. For their project the team meticulously recruited fifty-eight women who were caring for their chronically ill children. The results showed that the more stressed the women said they were, the shorter were their telomeres and lower were their telomerase levels (Epel, et al., 2004) This finding is significant since a large number of ailments are caused by high stress levels. The investigators also found that while exercises, eating healthy, social support were all restorative, the most effective intervention capable of slowing the erosion of telomeres in aging is meditation.

In this context, the work of Korotkov and associates is relevant. Several publications of Korotkov and associates are listed in the References. In the nineties, the Korotkov team developed device called Gas Discharge Visualization (GDV) device for measuring the bioenergy field of humans (see also Pehlek, 1976). This device offers a painless, noninvasive, and virtually instantaneous measurement of bioenergy, stress levels, and the state of Chakras. An overview of GDV principles is presented in the Appendix. The GDV device was approved for use as a medical diagnostic device in hospitals many years ago by the Russian Ministry of Health. The Korotkov team also made a presentation on GDV to NIH (Chez, 2002). In this paper, we present the results of GDV measurements of seven volunteers in Russia with a specific focus on stress levels and show how this technology may offer prospects for large-scale investigations and is a good tool in self-help programs.

This Work

To begin, refer to Figure 1 which shows the bioenergy and chakras of an apparently healthy individual and one is quite unwell. Notice the dramatic difference between a normal individual's energy field and the disrupted energy field of an individual unwell. All seven chakras of the normal individual are centered and properly sized. Conversely, the chakras of the unhealthy individual are small and off-centered.

This investigation involved seven individuals thought to be chronically stressed (**KK, Need more details on the persons**). Figure 2 shows the bioenergy, numerical values of stress, and state of chakras of these seven persons. The stress levels of all seven subject are higher than normal; normal range is 2 to 4. The figures show that the higher the stress level, the more disrupted the energy field, and more unbalanced the chakras. Admittedly the sample size is rather small but the trends are unmistakable.

As a follow up, xxx patients were followed with a restorative therapy in the form of meditation and these results are shown in Figure 3. The improvement is evident (KK, Have you done this and if so, Do you have these results?)

By now, a large number of papers in reputed journals have reported on the benefits of meditation in a variety of fields including health and wellness, improvements in performance, and discord and violence. These include studies on brainwaves, heart rate synchronization, lowering of blood pressure, improvement in academic performance, among a host of other outcome measures. A listing of select papers is shown in Table I.

In the following we present a modern physics and Vedic-Yogic-Ayurvedic perspective on stress and ailments. It is heartwarming to see that the biochemical, modern physics, and Vedic-Yogic-Ayurvedic perspectives are strikingly resonant.

Modern Physics perspective

Stress is simply a word we use when the flow of energy through our body is out of alignment with the flow of energy through the rest of our world. Meditation puts the flow of energy back into alignment. Since the alignment of the flow of energy is based on the fundamental principle of least action, it is obvious that if we don't waste energy by expressing stressful emotions, we conserve our energy and live longer. In the sense of relativity theory, following the path of least action is the same as maximizing proper time. If you don't waste your energy, you have more time. If anything, telomeres are only an epiphenomena or a marker of this fundamental process. This principle could also be expressed in terms of matching the frequency of the energy waves rather than the vector field-idea of the alignment of the flow of energy, but quantum theory tells us they are the same thing. The expression of stressful emotions is no different than an interference pattern that indicates we are not following the path of least action, which is like the shortest distance between two points on our world-line.

Vedic-Yogic perspective

Vedas-Yoga-Ayurveda say that we have five bodies, not one. The first is what we have come to understand as the physical body while the rest are energy bodies. They are: (1) Annamaya Kosha – physical body – food sheath, (2) Pranamaya Kosha – pranic energy sheath, (3) Manomaya Kosha - mind sheath, (4) Dyanamaya Kosha – knowledge sheath, and (5) Anandamaya Kosha – Blissful body. Each controls all the lower sheaths. In the Pranamaya Kosha there are seven major energy centers called chakras that tap the energy from the cosmos which yogis suggest provides 70% of our energy requirements. Of the remaining, 10% comes from food, and 20% from the air we breathe. Blockages in the various sheaths disrupt the normal flow of energy to the physical body producing all kinds of ailments among the first manifestation of which is stress. The Dnyanamaya Kosha houses our past psychic impressions and unresolved issues. Negative impressions are associated with negative impressions and they send a disruptive signal to the Manomaya Kosha which produces negative emotions (anger, hostility, jealousy, hatred, sorrow) leading to stress and disease. Yoga prescribes Pranayam - Pranic energy - breathing exercises for maximizing the Pranic energy in the Pranamaya Kosha which has a restorative effect on health and wellness. Yoga says that meditation works at the subtler levels by dissolving the karmic layer in the Dnyanamaya Kosha. Additionally, meditation raises our Sattvic component and makes us better human beings, so it is like having our cake and eating it too.

Our present bioenergy status is indicative of future health while out current health status is reflective of our past cumulative bioenergy status. It appears that disturbances in our bioenergy are the first signs of impending health issues well before the symptoms of the diseases are manifested in the physical body. And this may provide a path forward for healthier life by adopting better diet, exercises, yoga, Pranayam, meditation, etc.

Conclusions

The applicability of gas discharge visualization device in the measurement of stress levels is illustrated. The methodology is noninvasive, painless, and takes only a couple of minutes to complete. Since meditation has been shown to provide a wide variety of benefits including reversing the negative effect of stress, the information reported nicely supplements and complements traditional medical approaches to illnesses.

Acknowledgments

References

[1]   Chez, Ronald, A., Ed., Proceedings: Measuring the Human Energy Field – State of the Science, The gerontology research Center, National Institute on Aging, National Institute of Health, Baltimore, MD April 17 - 18, 2002.

[2]   Epel, Elissa, et al., Accelerated Telomere Shortening in Response to Life Stress, Proceedings of the National Academy of Sciences, 101, 49, December 2004. pp. 17312-17315.

[3]   Jakovleva E., Korotkov K., Electrophotonic Analysis in Medicine. GDV Bioelectrography research. 2013. 160 p. Amazon.com.

[4]   Korotkov K.G., Matravers P, Orlov D.V., Williams B.O. Application of Electrophoton Capture (EPC) Analysis Based on Gas Discharge Visualization (GDV) Technique in Medicine: A Systematic Review. The J of Alternative and Complementary Medicine. January 2010, 16, 1, pp.13-25.

[5]   Korotkov K.G., Energy fields Electrophotonic analysis in humans and nature, 2012. 240 p. e-book: Amazon.com.

[6]   Korotkov K. and Orlov D., Analysis of Stimulated Electrophotonic Glow of Liquids. www.WaterJournal.org V 2, 2010.

[7]   Korotkov, K., Madappa, K., Orlov, D., New Approach for Remote Detection of Human Emotions; *Subtle Energies & Energy Medicine • Volume 19 • Number 3 • Page 2; July* 2010.

[8]   Korotkov K., Korotkin D. Concentration dependence of gas discharge around drops of inorganic electrolytes. J of Applied Physics, 2001, 89, 9, 4732-4737.

[9]   Pehek J. O., Kyler, H. J., and Foust, D. L., Image Modulation in Corona Discharge Photography, Science, Vol. 194, 263 – 270, October 1976.

APPENDIX

In the mid-nineties Konstantin Korotkov developed a scientific device based on the ancient Chinese system of energy meridians for measuring the bio-energy of living organisms and the environment. The device provides non-invasive, painless and almost immediate evaluation which can highlight potential health abnormalities prior to even the earliest symptoms of an underlying condition, and suggests courses of action (9).

GDV utilizes a weak, completely painless electrical current applied to the fingertips for less than a millisecond. The body's response to this stimulus is the formation of a variation of an "electron cloud" composed of light energy photons. The electronic "glow" of this discharge (invisible to the human eye) is captured by an optical CCD camera system and then translated into a digital computer file. The data from each test is converted to a unique "Photonic Profile", which is compared to the database of hundreds of thousands of data records using 55 distinct parametric discriminates, and charted so that it is available for discussion and analysis. A graph of the findings is presented as a two-dimensional image. To study these images, fractal, matrix, and various algorithmic techniques are linked and analyzed. In addition, the system provides instant graphic representations of the data to provide easy reference and interpretation. To enhance the

data in an understandable and meaningful manner, a further graphic representation is generated, placing the indicators within the outline of the human form, for ease of explanation and discussion. For a more in-depth understanding of GDV, the reader is referred to the papers 8 to 12 under References. GDV has been in the market for over fifteen years and has received registration as a routine medical diagnostic device by the Russian Ministry of Health upon recommendation of the Russian Academy of Sciences.

The GDV device has numerous applications the field of medicine and sports. It can determine the physiological and psycho-emotional state of a human being. The parameters that the GDV provides indicative of physiological and psycho-emotional state are: (1) Stress level, (2) Bioenergy intensity, (3) Normality of various organs and systems, and (4) Sate of the Chakras. These parameters will allow aspirants to gage the extent of progress they are making with their practices such as Yoga, Pranayam, meditation, medical interventions, etc.

A special software environment was developed for processing and analyzing BIO-grams, oriented towards the work in different problem domains. Adaptation for particular assessment is performed through a combination of optimal operations from the library for the given problem domain, selection of corresponding procedures, and (or) selection of optimal threshold values. The following main algorithms are included in the library:

Pseudo-coloring. For visual estimation of the image, there are several algorithms of pseudo-coloring, oriented towards marking out several peculiarities of BIO -grams. The following **Intensity palette** is most commonly used. In this processing, image points are colored in one of eight colors. The brightest glow points are colored in the shades of blue, less bright points are colored in the shades of red. Points are colored in yellow when the intensity is higher than the noise level, but lower than the base noise level for the given frame. All image points removed by noise filtration are shown as white background. Special programs are designed for the calculation of the following BIO-gram parameters: ***Total image area (S)****: the number of pixels in the image having brightness above the threshold*. ***Average Intensity (I)*** is an evaluation of the Intensity spectrum for the particular BIO-gram. **Entropy (Entr)** of the image is calculated in accordance with non-linear algorithm, presented in (13). **Energy (E)** of light emitted by the subject is equal to:

$$E = k \; S*I \; \text{(Joules)} \tag{1}$$

Where k is a numerical coefficient depending on spectral parameters of the particular CCD camera. For the GDV instruments $k = 2*10^{-4}$.

The primary outputs of the GDV connected to the eco-sensor are the energy intensity and entropy of the space. We may state that bias current in the electrical chain depends on the capacitance of space between antenna and environmental-grounded and electro-conductive subjects. Both geophysical parameters of the particular environment and man-made electromagnetic field and constructions would influence this capacitance. This process is being

modeled both experimentally and theoretically (9). Emotions are related to the activity of the parasympathetic division of the autonomic nervous system, which changes blood microcirculation, perspiration, sweating, and other functions of the body, resulting in the changes of the overall conductivity of the body and the conductivity of acupuncture points in particular. Therefore, the presence in the vicinity of the instrument of the emotional people may change the conductivity of space and, hence, the signals of the sensor. This may be related to the formation of areas of decreased entropy in space, or, as Prof. W. A. "Bill" Tiller suggests, "associated with the buildup of a negative magnetic charge manifesting in the environment" (11). Some quantum effects may be involved as well.

Figure 1. Bioenergy Field and Chakras of an Apparently Healthy Individual (left) and one who is Quite Unwell (Right)
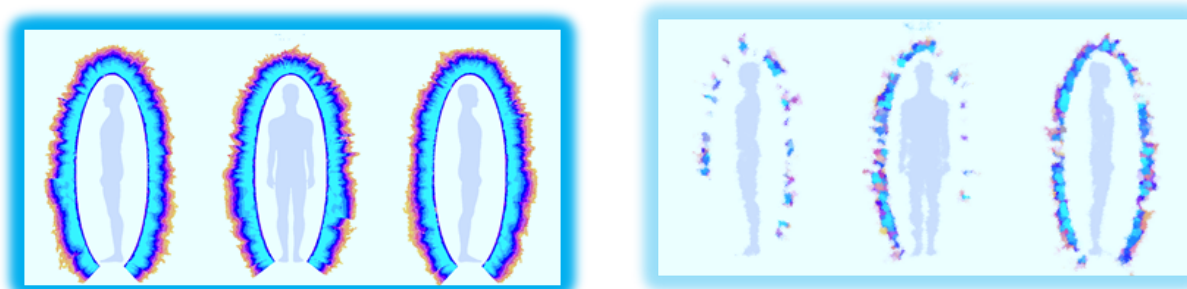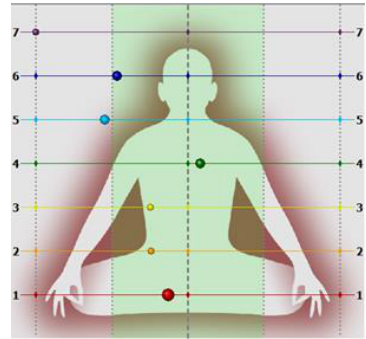

Illustrations

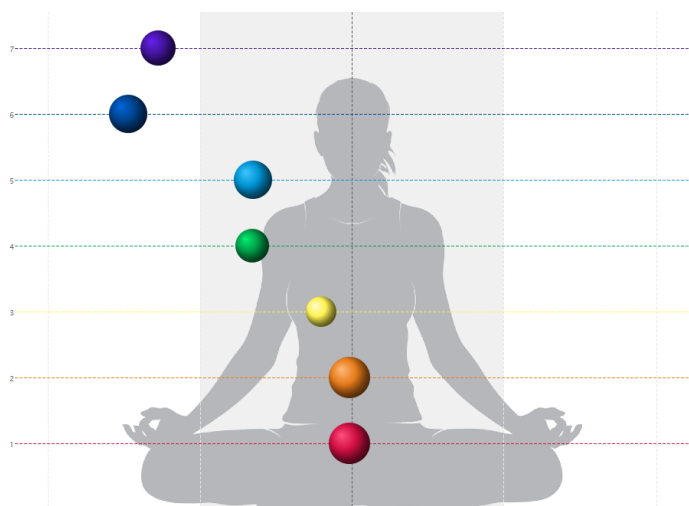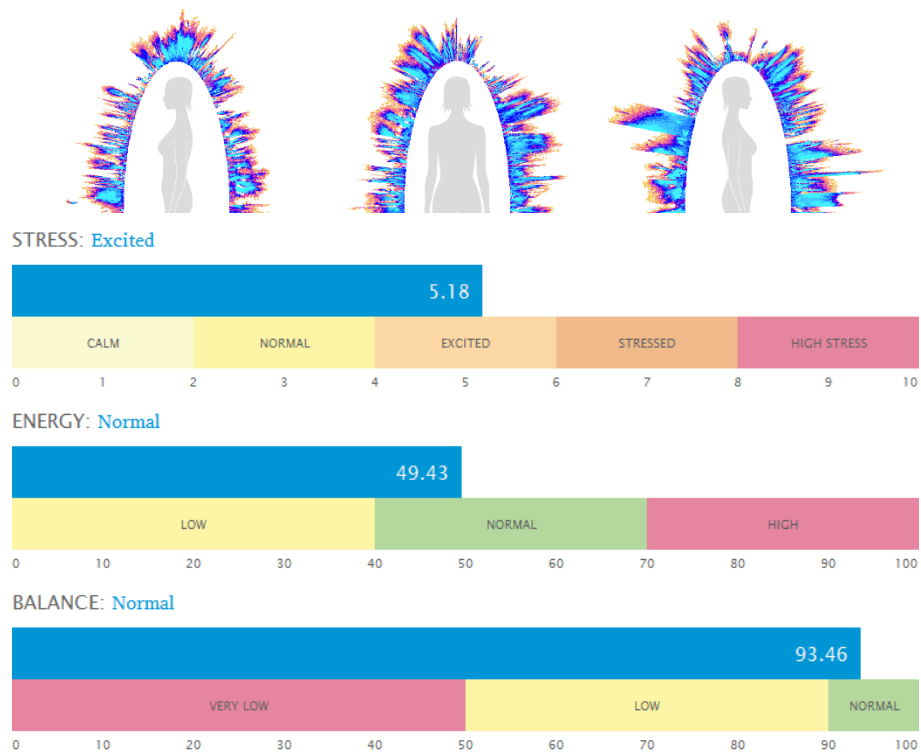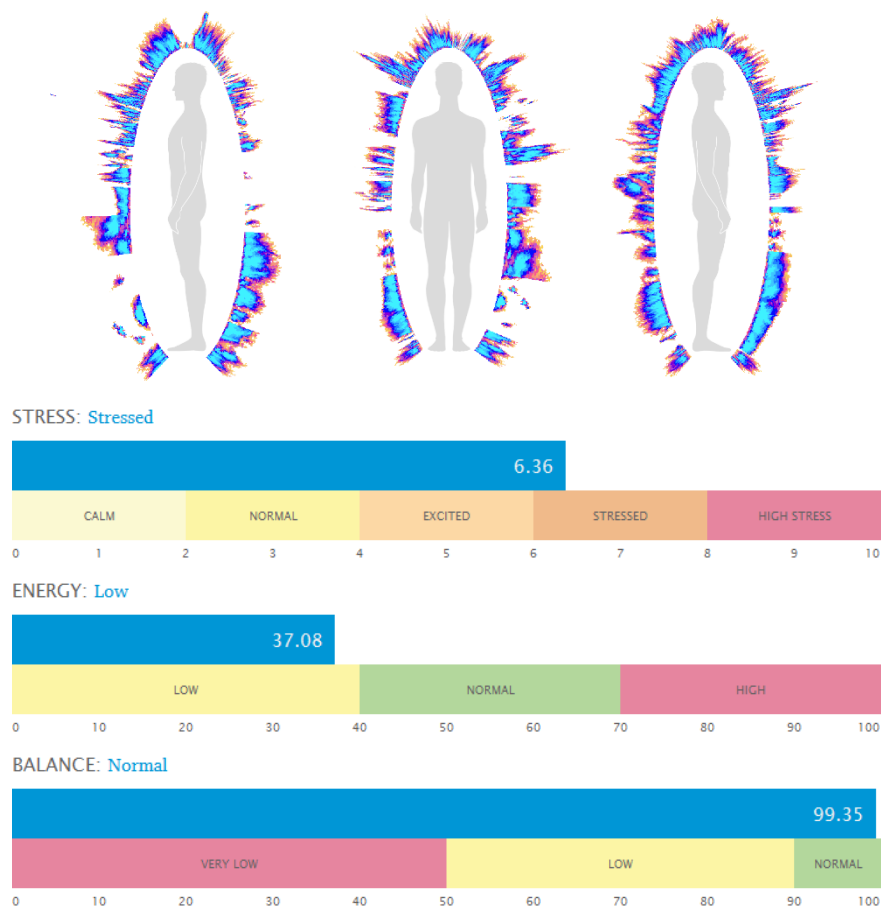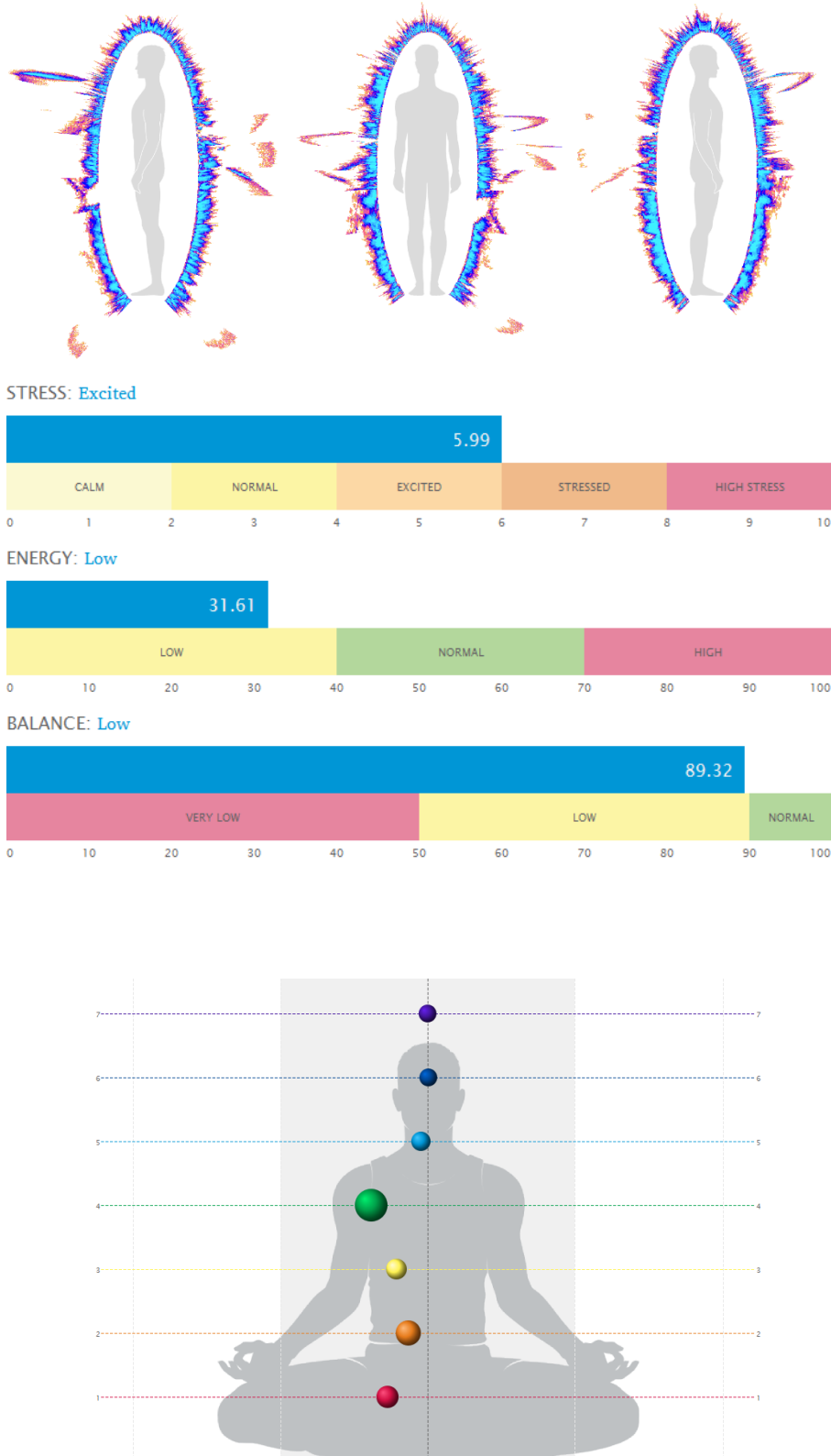**Figure 2(a). Bioenergy Field, Stress Level, and Chakras of Subject 1**

STRESS: Excited

				5.18					
CALM		NORMAL		EXCITED		STRESSED		HIGH STRESS	

0   1   2   3   4   5   6   7   8   9   10

ENERGY: Normal

	49.43		
LOW		NORMAL	HIGH

0   10   20   30   40   50   60   70   80   90   100

BALANCE: Normal

		93.46
VERY LOW	LOW	NORMAL

0   10   20   30   40   50   60   70   80   90   100

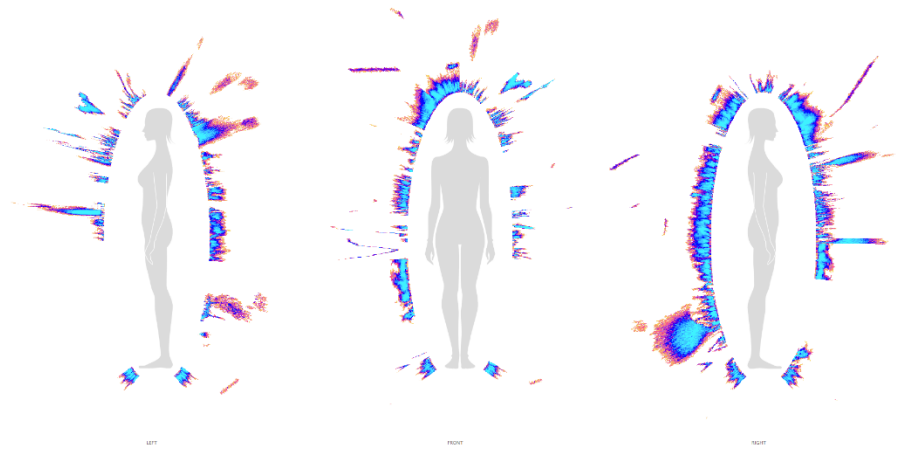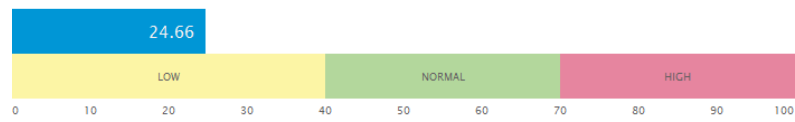**Figure 2(b). Bioenergy Field, Stress Level, and Chakras of Subject 2**

STRESS: Stressed

CALM	NORMAL	EXCITED	STRESSED	HIGH STRESS

6.36

0 1 2 3 4 5 6 7 8 9 10

ENERGY: Low

37.08

LOW	NORMAL	HIGH

0 10 20 30 40 50 60 70 80 90 100

BALANCE: Normal

99.35

VERY LOW	LOW	NORMAL

0 10 20 30 40 50 60 70 80 90 100

Figure 2(c). Bioenergy Field, Stress Level, and Chakras of Subject 3

STRESS: Excited

5.99

| CALM | NORMAL | EXCITED | STRESSED | HIGH STRESS |

ENERGY: Low

31.61

| LOW | NORMAL | HIGH |

BALANCE: Low

89.32

| VERY LOW | LOW | NORMAL |

Figure 2(d). Bioenergy Field, Stress Level, and Chakras of Subject 4

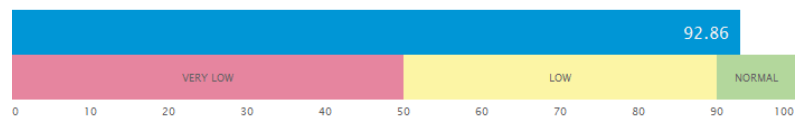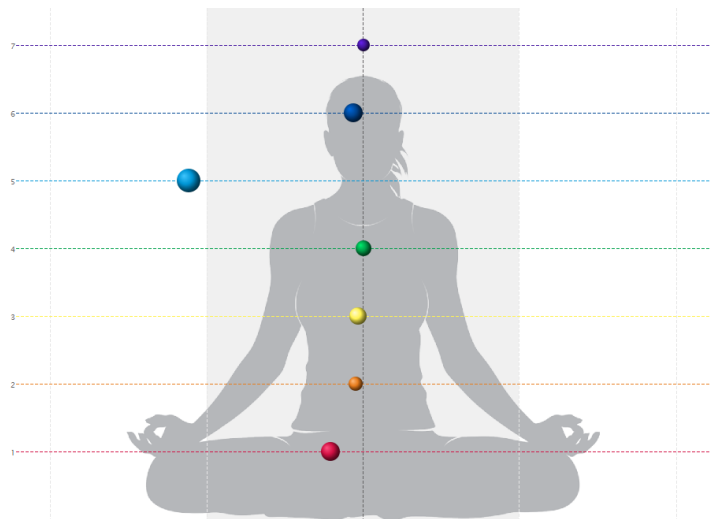STRESS: High stress

	CALM		NORMAL		EXCITED		STRESSED		HIGH STRESS	
0	1	2	3	4	5	6	7	8	9	10

10.00

ENERGY: Low

24.66

		LOW			NORMAL			HIGH		
0	10	20	30	40	50	60	70	80	90	100

BALANCE: Normal

92.86

		VERY LOW				LOW			NORMAL	
0	10	20	30	40	50	60	70	80	90	100

Figure 2(e). Bioenergy Field, Stress Level, and Chakras of Subject 5

STRESS: Excited

5.05				
CALM	NORMAL	EXCITED	STRESSED	HIGH STRESS
0 1 2	3 4	5 6	7 8	9 10

ENERGY: Low

35.65		
LOW	NORMAL	HIGH
0 10 20 30	40 50 60 70	80 90 100

BALANCE: Normal

99.24		
VERY LOW	LOW	NORMAL
0 10 20 30 40	50 60 70 80	90 100
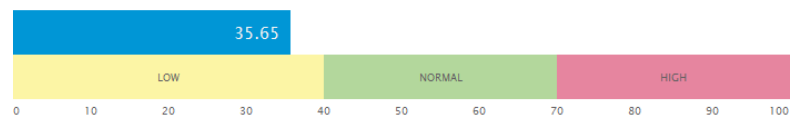
Figure 2(f). Bioenergy Field, Stress Level, and Chakras of Subject 6

STRESS: Stressed

ENERGY: Low

BALANCE: Normal

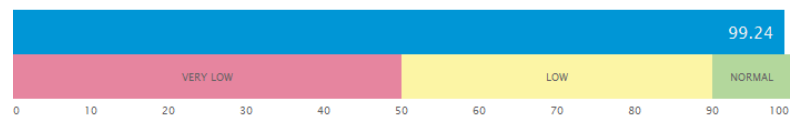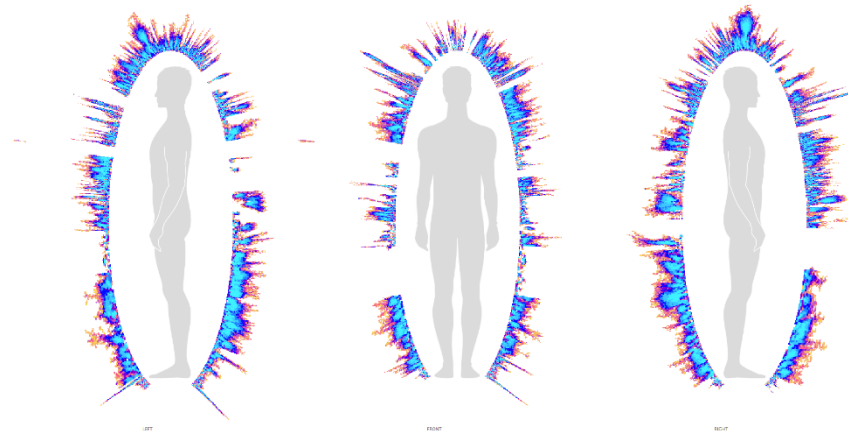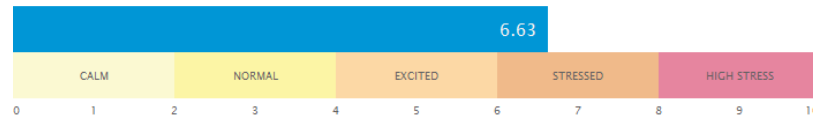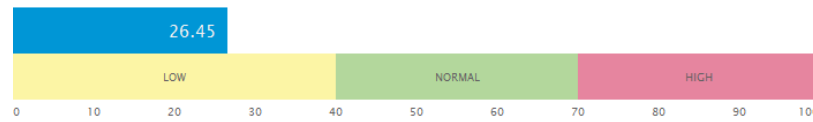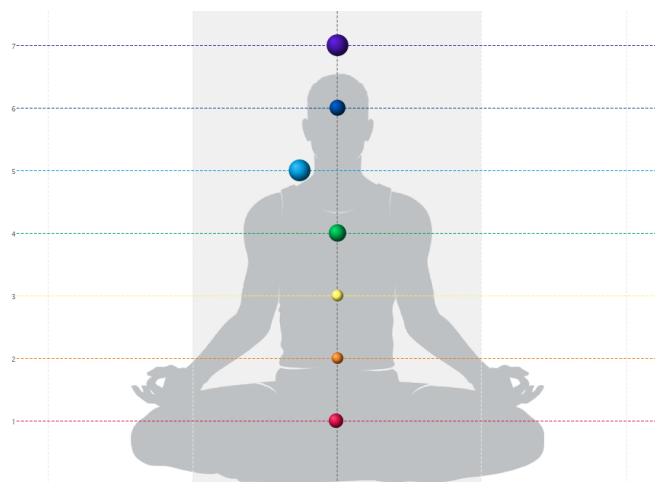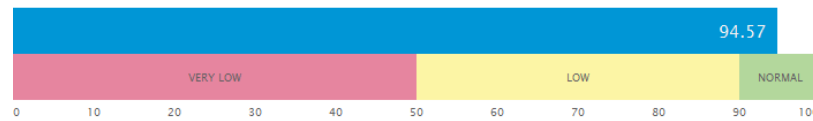**Figure 2(g). Bioenergy Field, Stress Level, and Chakras of Subject 7**

STRESS: High stress

				10.00
CALM	NORMAL	EXCITED	STRESSED	HIGH STRESS

0   1   2   3   4   5   6   7   8   9   10

ENERGY: Low

17.56		
LOW	NORMAL	HIGH

0   10   20   30   40   50   60   70   80   90   100

BALANCE: Low

	61.61	
VERY LOW	LOW	NORMAL

0   10   20   30   40   50   60   70   80   90   100
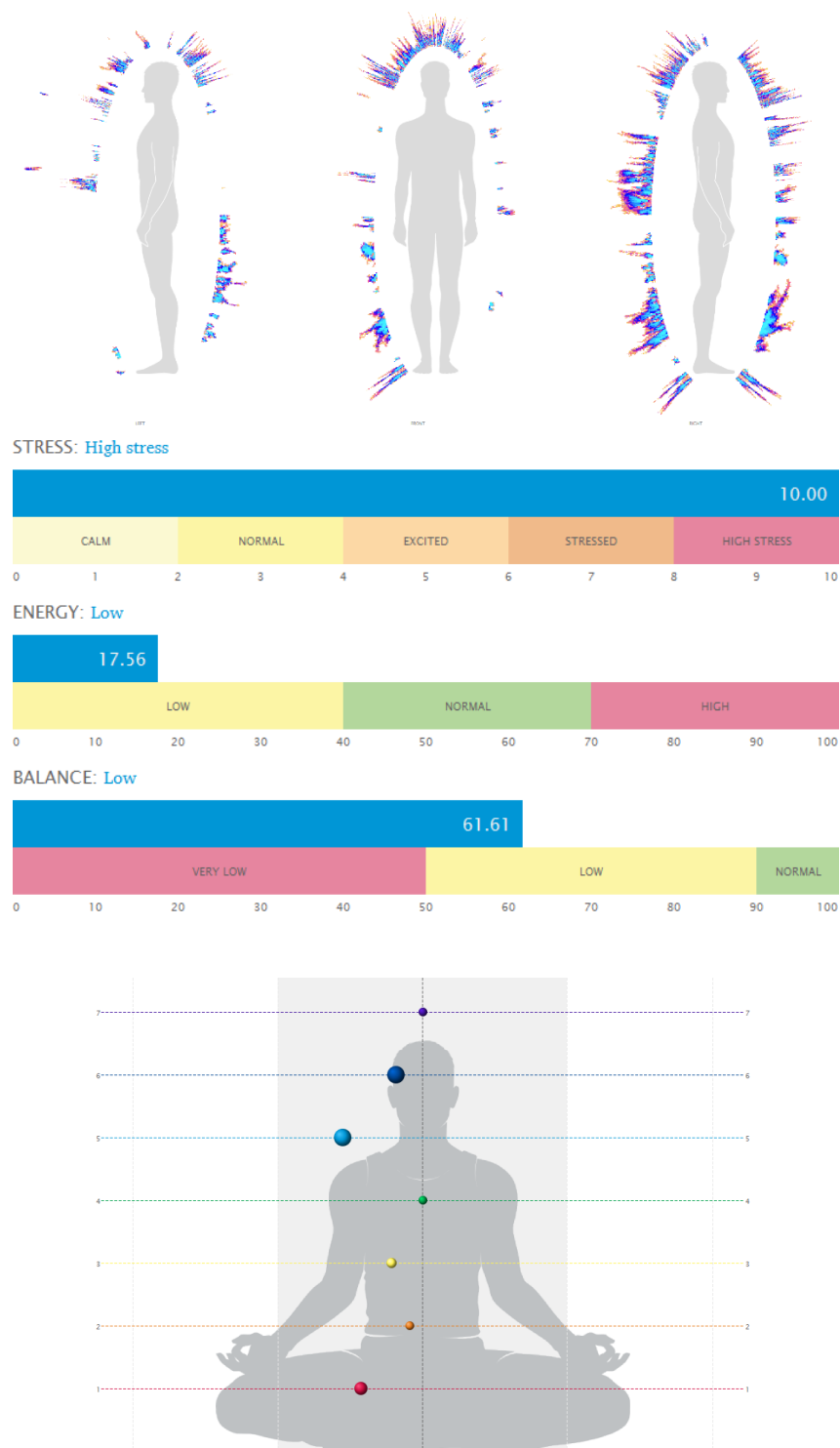
Table I. Articles on Meditation

No.	Authors	Journal	Outcome Investigated
1	Benson, H., et al.,	Nature, **295**, 234 – 236, 21 January 1982	Body Temperature Changes
2	Bhasin, M. K. et al.,	PLOS One, 8, 5, May 2013	Metabolism, Insulin Secretion, Inflammatory pathways
3	Boyers, J.	Forbes, May 30, 2013	Empathy
4	Condon, et al.,	Psychological Science, August 21, 2013.	Compassionate Response to Suffering
5	Deshpande, P. B., et al.,	Journal of Consciousness Exploration & Research, 5, 2, February 2014.	Materialization of Intentions
6	DeSteno, D.	New York Times, July 5, 2013	Compassionate Response to Suffering
7	George B.	HBR Blog, 10 March 10, 2014	Leadership
8	Fryer, B.	HBR Blog Network, September 18, 2013.	Compassionate Management
9	Lutz, et al.,	PNAS, 101, 46, November 16, 2004.	Gamma Wave Synchrony
10	Paul-Labrador, M., et al.	*Archives of Internal Medicine*, 166, 1218, 2006.	Metabolic Syndrome and Heart Disease
11	Paturel	NeurologyNow, August/September 2012.	Meditation as Medicine
12	Speca, M., et al.,	Journal of Biobehavioral Medicine,, Vol. 62 No. 5, 613-622, September 1, 2000.	Stress Reduction in Cancer Patients
13	Tang, Yi-Yuang, et al.,	PNAS, 110, 34, August 28, 2013.	Smoking Reduction
14	Tang, Yi-Yuang, et al.,	PNAS, 109, 26, 10570-10574, 2012	White Matter Changes
15	Tang, Yi-Yuang, et al.,	PNAS, 106, 22, 8865-8870, 2009.	Central & Autonomic Nervous System
16	Tang, Yi-Yuang, et	PNAS 104, 43, 17152-	Attention and Self-Regulation

	al.,	17156, 2007.	
17	Wallace, R. K.	Science, Vol. 167, No. 3926, 1970.	Physiological effects
18	Walton, A. G.	Forbes, July 24, 2013.	Healthcare Costs, Student Performance