Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition

Submitted by

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(A University, established under Section 3 of the UGC Act, 1956 vide)

Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition

Thesis submitted for the Award of

DOCTOR OF PHILOSOPHY (*YOGA*)

By

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UNDER THE GUIDANCE OF

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D E C L A R A T I O N

I, hereby declare that this study was conducted by me at Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bengaluru, under the guidance of Dr. T. M. Srinivasan Professor, Division of Yoga and Physical Sciences, S-VYASA University Bengaluru and Dr. H.R. Nagendra Chancellor S-VYASA University

I also declare that the subject matter of my thesis entitled "**Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition"** has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

Date: December, 2016 SHIVA KUMAR K

Place: Bengaluru (Candidate)

C E R T I F I C A T E

This is to certify that Shiva Kumar Kotikalapudi who has been given Ph.D. registration with effect from August 2012 by Swami Vivekananda Yoga Anusandhana Samsthana, Deemed University under the division of yoga and physical sciences has successfully completed the required 'training' in acquiring the relevant background knowledge of bioenergy research, Electro Photonic Imaging and its application on yogic practices (meditation) has completed the required 'course of research' for not less than two years to submit this thesis entitled "**Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition"** as per the regulations of the university.

We also declare that the subject matter of this thesis entitled "**Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition"** has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

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A C K N O W L E D G E M E N T

I would like to express the deepest gratitude to my guides, Dr. T. M Srinivasan and Dr. H. R. Nagendra for their constant guidance and encouragement throughout my PhD work.

I sincerely acknowledge Srinidhi Diabetic Centre, Bengaluru, India, for the facilities and support provided for the study by the management. I also express my sincere thanks to Dr. Subramanian and Alaka Mani, who always extended their support for collecting the data.

I thank Dr. P. Marimuttu from the department of Biostatistics NIMHANS who helped me with the statistical analysis and Dr. Judu Ilavarasu for his constant support throughout my research work.

I also thank my Ph.D. colleagues and friends Venkata Giri Kumar Pusuluru, Mooventhan, Nivethitha and Surendra Sankhla, who helped me during various phases of my work. I also would like to thank all the participants involved in my research as subjects.

I take this opportunity to record my sincere thanks to all the members of the faculty, specifically Dr. Guru Deo Ph.D. Co-0rdinator, Dr. Subramania Pailoor and Sushrutha S. I would be always grateful to my university Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA) for its support in promoting my research career.

I am indebted to my family and well-wishers for their inspiration, love and support. I also place on record, my sense of gratitude to one and all who, directly or indirectly, have extended their helping hand in this venture.

Finally I thank that unseen divine without whose wish, this work would not have been possible.

Date:

Place: Bengaluru SHIVA KUMAR K

STANDARD INTERNATIONAL TRANSLITERATION CODE USED TO

a	=	अ	ṅa	=	ङ	pa	=	प
ā	=	आ	ca	=	च	pha	=	फ
I	=	इ	cha	=	छ	ba	=	ब
ī	=	ई	ja	=	ज	bha	=	भ
u	=	उ	jha	=	झ	ma	=	म
ū	=	ऊ	ñ	=	ञ	ya	=	य
ṛ	=	ऋ	ṭa	=	ट	ra	=	र
ṝ	=	ॠ	ṭha	=	ठ	la	=	ल
e	=	ए	ḍa	=	ड	va	=	व
ai	=	ऐ	ḍha	=	ढ	śa	=	श
o	=	ओ	ṇa	=	ण	ṣa	=	ष
au	=	औ	ta	=	त	sa	=	स
ṁ	=	अं	tha	=	थ	ha	=	ह
ḥ	=	अः	da	=	द	kṣa	=	क्ष
ka	=	क	dha	=	ध	tra	=	त्र
kha	=	ख	na	=	न	jña	=	ज्ञ
ga	=	ग	gha	=	घ			

ABSTRACT

BACKGROUND: This work has two components, analysis of Electro Photonic Imaging (EPI) data for anapansati meditation and mudra data with an intent to identify statistically significant changes and detecting a pattern for training a neural network for intervention recognition. The other parts involve collecting of EPI data from diabetic and non-diabetic subjects and explore the possibility of classifying the two samples.

AIM: To study the effect of the pattern of variation of EPI parameters using neural networks for diseased condition specifically diabetes, variation of EPI parameters with mudra and meditation as interventions.

METHODS: Electro Photonic Imaging (EPI) data was collected from 200 subjects including male and female in the age group of 20 to 60 years from a diabetic center in Bangalore, India. The EPI data was captured from all the ten fingers from the subjects who came for regular blood test. The EPI data corresponding to the meridians of the ring finger, chakras, organs and organ systems related to diabetes were analyzed using general linear model in IBM SPSS. A built-in neural network classifier from IBM SPSS was used to classify diabetic subjects from non-diabetic subjects.

RESULTS: The mean and standard deviation values for pancreas were 5.024 and 1.027 (Energy units) for the diabetic subjects and 4.73 and 0.87 for non-diabetic subjects. Similarly, for hypothalamus the mean and standard deviation values were 4.97 and 0.759 for diabetes and 4.61 and 0.861for non-diabetic subjects. The classification accuracy of the neural network classifier was in the range of 80% to 100% for classifying diabetic and non-diabetic subjects. Meditation was found to have a significant impact on EPI parameters. Further, neural network was able to

classify pre and post meditative population using EPI data with an accuracy ranging from 84% to 100%. The EPI data for prana mudra has statistically significant changes in the meridians corresponding to thumb, little and ring fingers. Significant changes were also observed in 5 variables corresponding to the index and middle fingers.

CONCLUSION: Electro Photonic Imaging combined with neural network works as a good framework for intervention recognition. This framework needs to be studied more extensively and refined for disease diagnosis, through EPI.

CONTENTS

CHAPTER 1

1.0 INTRODUCTION

Measurement of Electro Photonic Imaging (EPI) is based on the electrical activity of the human organism. This activity is quite different in diseased condition of a human body as compared to the activity in a healthy body. This method draws stimulated electrons and photons from the surface of the skin under the influence of a pulsed electromagnetic field. This process is well studied through physical electronic methods and is known as "photoelectron emission." EPI is being used in more than 63 countries. It is important to note that this method of assessment is quite different from normal electrophysiological methods used in clinics, such as EKG and EEG. These terms are related to the electrical activity of the organs whereas EPI parameters are a measure of induced electron availability in organs. The instrument shown in Fig1 was used to study the Electron Emission patterns for diabetic and non-diabetic subjects. This instrument was also used to monitor pre and post EPI parameters after a meditative intervention.

Fig 1.1a
EPI device with a computer interface

Fig 1.1b
Position of the finger on glass plate

1.1 ELECROPHOTONIC IMAGING & ACCUPUNCTURE MERIDIANS

The EPI effect occurs when an object is placed on a glass plate as shown in Fig 1.1b and stimulated with high‐frequency high‐voltage electric field; a visible glow occurs around the object, which is a gas discharge. This glow is quantifiable and reproducible for scientific research purposes. In a normal experiment, the fingertip images are collected individually and used for analysis. Images captured from all 10 fingers provide detailed information about the person's psychosomatic and physiological state. The Electro Photonic images taken from each of the ten fingers is divided into sectors and mapped to the corresponding meridians as per the acupuncture theory of meridians. The images of the ring and little fingers divided into sectors are shown in Fig 1.1c. Sectors 3 of the right hand ring finger and sector 6 of the left hand ring finger correspond to pancreas and reflect details related to the health of pancreas in diabetes.

Two conditions are obtained while taking the images known as with filter and without filter. In the first case, a filter (a thin specially designed plastic sheet) is interfaced between the finger and the glass plate. It has been clinically observed that images with filter record only the physiological condition of the person (with sweat being absorbed by the filter). However, without the filter, the images are a reflection of the psychology of the person undergoing the EPI scan.

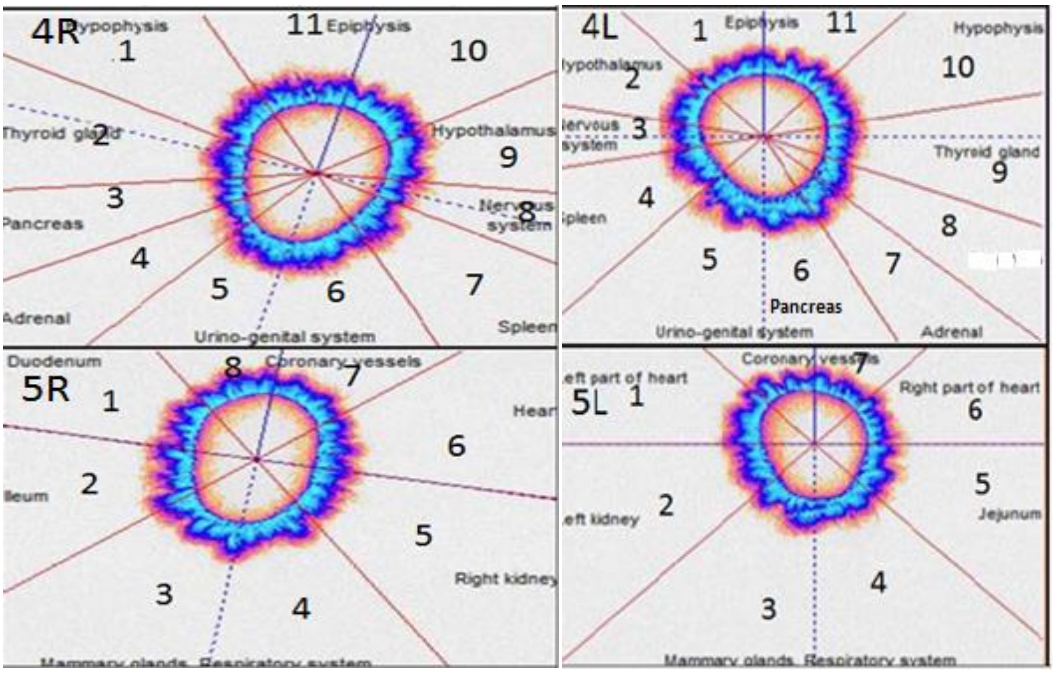
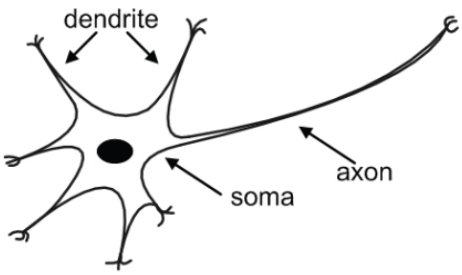


Fig 1.1c. 4R: Right Ring Finger, 4L Left Ring Finger, 5R: Right Thumb, 5L: Left Thumb

1.2 ROLE OF ARTIFICIAL NEURAL NETWORKS IN MEDICAL RESEARCH

Artificial Neural Networks (ANN) are used in many domains for pattern classification and function approximation medical research (bioinformatics, EEG studies), speech processing (NET talk, phonetic typewriter) and image processing (recognition of hand written characters, character recognition, symbol recognition).

Artificial Neural Network (ANN) (B.Yegnanarayana, 2010) is a model consisting of a set of processing units which are closely interconnected to each other such that a rich structure is formed which exhibits certain features of biological neural network. The fundamental unit of a biological neural network is a neuron and each neuron is connected to other neurons through dendrites and axons at the synaptic junctions or synapses.



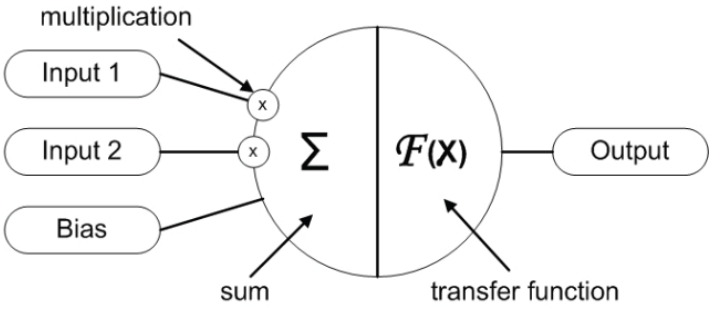


Fig 1.2a Biological Neuron **Fig1.2b Processing Unit (Artificial Neuron)**

Every neuron contains cell body or soma, an axon and a dendrite as shown in Fig 1.2a and the corresponding artificial neuron is shown in Fig 1.2b. The axon is one of the two types of protoplasmic protrusions extending from the neuron cell bodies. There is only one Axon for a neuron. The axon is a slender, arm like projection. It extend tens, hundreds, or even tens of thousands of times the diameter of the soma in length and typically conducts electrical impulses away from the neuron's cell body. Axon transmits information to different neurons, muscles, and glands. In certain sensory neurons (pseudo unipolar neurons), such as those for touch and warmth, the electrical impulse travels along an axon from the periphery to the cell body, and from the cell body to the spinal cord along another branch of the same axon. The axon is specialized for the conduction of particular electric impulses known as action potentials.

Dendrites are the second of the two types of protoplasmic protrusions that extrude from the cell body of a neuron. These are cellular extensions with many branches and are specialized to receive chemical signals from the axon terminations of other neurons. Dendrites convert these signals into small electric impulses and transmit them to the soma. Electrical stimulation is transmitted onto dendrites by upstream neurons (usually their axons) via synapses, which are located at various points throughout the dendritic tree. Dendrites play a critical role in integrating these synaptic inputs and in determining the extent to which action potentials are produced by the neuron.

The fundamental unit of ANN is the processing unit shown in Fig 1.2b which gets connected to every other neuron in the network. Processing unit consists of a summing part which receives N input values, weights each value and computes weighted sum. The output function (activation function) generates an output value for a given weighted value. The output value depends on the activation function selected identity, softmax, hyperbolic Tangent and Sigmoid are some of the functions.

Pattern recognition is the fundamental ability of the neural networks comprising of pattern association, pattern classification, pattern grouping and pattern mapping. In case of biological neuron information comes into the neuron via dendrite, soma processes the information and passes it via axon to the other neurons. In case of artificial neuron the information comes into the body of an artificial neuron via inputs that are weighted (each input can be individually multiplied with a weight). The body of an artificial neuron then sums the weighted inputs, bias and "processes" the sum with a transfer function. At the end an artificial neuron passes the processed information via output(s) (Suzuki, 2011).

1.2.1 INTERCONNECTIONS

The way that individual artificial neurons are interconnected is called the architecture or graph or topology of an artificial neural network. The fact that interconnection can be done in many ways results in several possible topologies that are divided into two basic classes. One is the simple **feed forward topology** where information flows from inputs to outputs in only in one direction. It uses Back Propagation learning and is implemented in two or three layers useful for solving many pattern recognition tasks. The other is the **feedback topology** where some of the information flows

not only in one direction from input to output but also in opposite direction. This uses Boltzman learning and has limited capabilities in solving pattern recognition tasks.

An artificial neural networks based on the feed forward architecture is shown in Fig 1.2.1. In this architecture, the neurons are interconnected to every other neuron in the network and the connections are associated with weights and the information flow is as shown by the arrows from input to output.

Processing units (neurons) are arranged in layered fashion. ANN defines 3 layers namely **Input Layer** (i.e. The neurons in this layer get inputs from the external world, The neurons output in this layer are connected to all other neurons in the adjacent layer, a weight is associated with each of the connections), **Hidden Layer** (i.e. There could be one or more hidden layers number of hidden layers depend on applications The neurons in this layer get inputs from the input layer for first hidden layer and from the first hidden layer to the second hidden layer and so on The neuron output in this layer is connected to all other neurons in either next hidden layer or output layer) and the **Output Layer** The neurons in this layer get inputs from the hidden layer and the outputs of the neuron are used by the application for decision making. The next step after choosing the topology of our artificial neural network is training or making the network learn. Just as biological neural networks need to learn their proper responses to the given inputs from the environment, the artificial neural networks need to do the same.

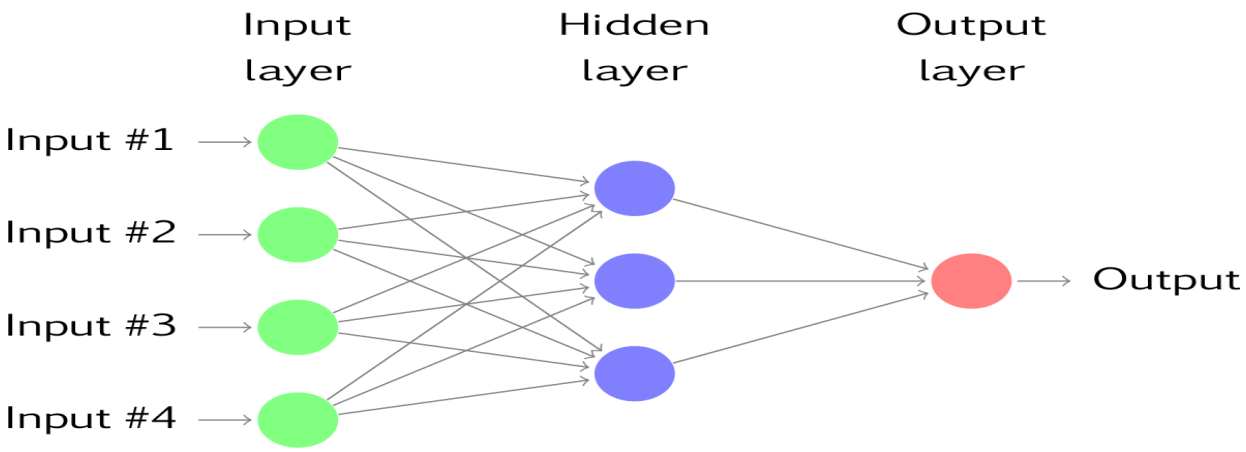


Fig 1.2.1. Interconnections

1.2.2 LEARNING

The goal of ANN model is to learn and classify the patterns successfully. Training is the basis for learning and is an iterative process. A set of input patterns are applied to the network and the outputs are recorded, error between the actual output and the expected output is computed and the computed errors are used to adjust the weights of neurons such that the error of the network is reduced next time when the same set of input patterns are applied. Weight adjustments can be done in two ways: Online (i.e. weights are adjusted with every input pattern) and Batch (i.e. Weights are adjusted after all the patterns are completed). The following parameters are used in training.

Epoch -- A single pass through entire training set is referred to as an epoch

Learning rate (α) -- used to specify how much the weights are adjusted each time

Momentum rate -- used to increase the learning speed by increasing the weight adjustment size

The Procedure is repeated until the error is minimum for all the patterns. The set of weight vectors represent the patterns. At the end of the successful training a set of patterns which are not used in the training are used for validating the network.

Perform training for a predetermined number of iterations is based on domain knowledge or previous experience.

Training is continued till the error drops below a threshold specified apriori, simple approaches are susceptible to overtraining. Performance observed in training may not be repeatable with new data which is not used in training to address the problem; the input patterns are divided into two sets training and testing.

Training patterns are used to adjust the weights of the network during training; testing patterns are used to evaluate the generalizing capability of the networks and the weights are not adjusted with testing patterns.

An increase in the error with testing patterns while error is decreasing with training pattern is an indication of overtraining, Validation set is used to evaluate the performance of network.

Learning is the basis for pattern recognition. There are three major learning paradigms; supervised learning, unsupervised learning and reinforcement learning. Usually they can be employed by any given type of artificial neural network architecture. Each learning paradigm has many training algorithms. The task of the learning artificial neural network is to set the value of its parameters for any valid input value after having seen the output value. The training data consists of pairs of input and desired output values that are traditionally represented in data vectors. Supervised learning can also be referred as classification, where we have a wide range of classifiers, each with its strengths and weaknesses choosing a suitable classifier (multilayer perceptron, support vector

machines, k-nearest neighbor algorithm, Gaussian mixture model, Gaussian, naive Bayes, decision tree, radial basis function classifiers etc.). Solution to a given problem is however still more an art than a science. IBM SPSS supports two classifiers Multi-Layer Perceptron (MLP) and Radial Basis functions. We have used MLP with the number of neurons in the inputs to be equal to the number of EPI parameters (i.e. ranging from 84 parameters to 3 parameters). The number of neurons in the hidden layer were experimented with, to reduce the learning time. Since this is a binary classification there was only one neuron in the output layer with the hyperbolic tangent as an activation function. Since we have chosen feed forward network which uses the Back Propagation learning and is implemented in two or three layers. It is useful in solving many pattern recognition tasks.

In the next chapter, we shall briefly present ideas from classical literature related to origin of diseases and in the subsequent chapter, present technical literature survey in the areas selected for study.

CHAPTER 2

2.0 REVIEW OF LITERARY SEARCH

2.1 BACKGROUND AND SCOPE

Taittiriya Upanishad describes human existence in *pancakośa viveka,* according to which humans have five layers or sheaths. The first one, namely, *Annamayakośa* corresponds to the gross physical body, followed by *prāṇamayakośa* corresponds to the energy body, *manomayakośa* corresponds to emotional body, *vijnanamayakośa* corresponds to intellectual body and *ānandamayakośac* corresponds to the bliss body (*Taittiriya* Upanishad –Briguvalli) (S. Nikhilananda, Ramakrishna-Vivekananda Center, New York, NY, 1994).

The prāṇamayakośa sheath of vital energy is also known as the pranic body. It coexists within the physical body as its source of life, breath and vitality. It interconnects the *annamayakośa* (physical body) with the other more subtle sheaths (S. Gambhirananda Advaita Ashrama, Pithoragarh, 1986). Prāṇā flows throughout the body through energy channels called *nāḍis*. These *nāḍis* conglomerate at certain places called chakras (thought to be nerve plexus).There are seven major chakras (*muladhara, ṣvadhistana, manipura, ānahata, ājna and ṣahasrara*). *Prāṇā* moves in the *prāṇamayakośa* as five primary currents or vayus, "vital airs or winds." This *prāṇamayakośa* disintegrates at death along with the physical body (S. N. Saraswati, 1994).

Psychosomatic diseases originate from *manomayakośa* (emotional body), percolate into *prāṇamayakośa* (energy body) through the vital life-force (*prāṇā*), and settle in the physical body, inflicting damage to the weakest organs (Yoga Vasista ch II, verses 709–723), affecting the physiology and functionality of those organs (S. Venkatesananda, 1985).

Diseases are of two kinds, *Adhija* (originated in the mind) and *Anadhija* (non-stress-related) *vyadhis*. *Adhis* are twofold: ordinary and essential. *Samanya*/ordinary diseases could be termed as life style non-communicable diseases since these are produced during the interactions (mental conflicts) with the world (Kavuri, Raghuram, Malamud & Selvan, 2015).

In this thesis, we present three distinct studies related to mind-body problems, The first one is related to meditation and its effect on EPI parameters. The second study is related to mudras and their monitoring through EPI parameters. The third is related to identification of a pattern of EPI parameters in diabetic condition distinctly different from a non-diabetic condition for disease diagnosis using an artificial neural network.

Since the disease originates from the *manomayakośa* it will be relevant to discuss the practices related to the *manomayakośa,* specifically meditation. Effect of meditation on the activation of autonomic nervous system and attentional mechanisms is not new. Some studies have also attempted to understand the mechanism of meditation by monitoring the brain waves and the default mode network activity online.(Mars et al., 2012). There were also focused studies on effect of meditation on pain, stress, anxiety, hypertension and blood sugar (Orme-Johnson, 1995). The

present study is an attempt to understand the effect of meditation on various organs and organs systems using Electro Photonic Imaging (EPI) Technique.

Mudras signify a gesture with hands, eyes and the body. Different configurations of the joining of finger tips is also termed mudra and is used by yoga practitioners for energy manipulation and for therapeutic applications. Electro Photonic Imaging captures the coronal discharge around the fingers as a result of electron capture from the ten fingers. The coronal discharge around each fingertip is studied to understand the effect of mudra on EPI parameters.

Studies on EPI have reported on EPI's use to characterize some key pathologies including cancer, asthma, and autism (Yakovleva, & Korotkov, 2013).

The EPI grams of healthy and diseases subjects, EPI grams before and after yogic practices like Mudra and Meditation show a pattern of variation in the EPI parameters. These patterns are studied for their statistical significance as well as for machine learning to be able to distinctly differentiate them so as to diagnose a disease condition or to study the effect of a yogic practice on EPI parameters.

In this work we use artificial neural network as a machine learning tool and have explored the possibility of coming up with a frame work for disease diagnosis and intervention recognition. Though a Yogic practice is not an intervention we have loosely used the word intervention to mean a yogic practice used in our study.

2.2 AIM & OBJECTIVES

- The aim of the literature review is to understand the human body from an energy perspective as defined in the ancient texts.
- To explore how the energy body is affected through disease and with Yoga Practices like meditation and Mudra.
- To understand the origin and effects of thoughts on human body as described in the ancient texts.
- To understand the mechanism of meditations and Mudras from an energy perspective.

2.3 MATERIALS AND METHODS

The following Vedic and Yoga texts were used for understanding the source of disease.

- *Śrīmadbhagavad gītā* (श्रीमद्भगवद्गीता)
- *Yoga Vasiṣṭha* (योग वसिष्ठ)
- *Patañjali's Yogasūtra* (पतंजलियोगसूत्र)
- *Lalitā sahasranāmāvaḷi (*ललिता सहस्रनामावळि)
- *Kenopaniṣad* (केनोपनिषद)
- *Yogasaraupaniṣad* (योगसारा उपनिषद)
- *Muṇḍakopaniṣad* (मुण्डकोपनिषद्)
- *Praśnopaniṣad* **(**प्रश्नोपनिषद्**)**
- *Māṇḍukyopaniṣad* **(**मान्डुक्य उपनिषद्**)**

2.3.1 INCLUSION CRITERIA

The search captured only a subset of verses related to disease (*ädhi* vyādhi), *prāna, panca kosa* and *dhyāna*. The search also included manas and *citta.* Verses describing the source of thoughts, ways to eliminate thoughts were also included.

2.3.2 EXCLUSION CRITERIA

Exclusion criteria was set to eliminate multiple descriptions of the same entity. Verbose literary descriptions which provided rich source of information but not related to the current context were also excluded.

2.3. A. VEDIC SOURCES AND CLASSICAL YOGIC TEXTS INCLUDES

2.3. A.1 ORIGIN OF DISEASE FROM SRIMAD BHAGAVAD GITA

The classical literatures of India have presented mind as a harbinger of disease in the body. A brief introduction to this concept is presented below.

ध्यायतो विषयान्पुंसः सङ्गस्तेषूपजायते।
सङ्गात्सञ्जायते कामः कामात्क्रोधोऽभिजायते॥ २-६२॥
क्रोधाद्भवति सम्मोहः सम्मोहात्स्मृतिविभ्रमः।
स्मृतिभ्रंशाद् बुद्धिनाशो बुद्धिनाशात्प्रणश्यति॥ २-६३॥

dhyāyato viṣayānpuṁsaḥ saṅgasteṣūpajāyate।
saṅgātsañjāyate kāmaḥ kāmātkrodho'bhijāyate ।। 2-62।।
krodhādbhavati sammohaḥ sammohātsmṛtivibhramaḥ।
smṛtibhraṁśād buddhināśo buddhināśātpraṇaśyati ।। 2-63।।

(Bhagavad Gita Ch: 2; 62,63)

“While contemplating the objects of the senses, a person develops attachment to them, and from such attachment lust develops, and from lust anger arises. From anger proceeds delusion; from delusion, confused memory; from confused memory the ruin of reason, due to the ruin of reason the person perishes”.

This shows that the thoughts in the mind play a vital role. The thought then changes the breathing patterns as anger takes over and the change in breathing pattern affects the physical body.

2.3. A.2 ORIGIN OF DISEASE FROM YOGA VASISTA

The concept of disease, according to yoga, is found in the treatise called Yoga Vasistha. According to this text, modern diseases such as asthma, diabetes, hypertension, and anxiety are called “ādhijavyādhi” (stress born diseases) originating in *manomayakoça*, the mind layer of our existence. They arise from our actions that are governed by our emotions (strong likes and dislikes) rather than what is right or what is wrong. Often in this phase, we respond to our emotions - the pull of senses knowing fully well that we are going against what is right. This is called *prajnāparadha* in Ayurveda, a mistake at the level of inner consciousness. It is this ‘going against what is right' - the cosmic law- that causes an imbalance, a disease at the *manomayakoça* called *ādhi*.

यदन्तःमारुतोरूद्धःव्याधिःजन्तोः न जायते ।
देहदुःखंविदुःव्याधिंआध्याख्यंवासनामय्म् ॥

Yadantaùmärutorüddhaùvyädhiùjantoùnajäyate /
Dehaduùkhaàviduùvyädhimädhyäkhyaàväsanämaym //

(Yogavasistha, Ch: XX, V: 29)

If the vital air is bound (or restrained) within, physical ailment is not produced in a living being. The distress of the body is known as (physical) disease. Mental affliction consists of mental impressions (or knowledge derived from memory agitating the human psyche).

दुरन्नाभ्यवहारेण दुर्देशाक्रमणेन च ।
दुष्कालव्यवहारेण दुर्जनासङ्गदोषतः ॥
क्षीणत्वात् वाऽतिपूर्णात्वात् नाडीनांरन्ध्रसंततौ ।
प्राणे विधुरतां याते व्याधिःदेहेप्रवर्तते ॥

Durannäbhyavahäreëa durdeçäkramaëenaca /
Duñkälavyavahäreëa durjanäsaìgadoñataù| //
kñéëatvätvä'tipüreëätvätnäòénääràrandhrasantatau /
präëevidhuratääyätevyädhiùdehepravartate| //

(Yoga Vasishta Ch: XX, V: 30)

Disease occurs in the body when prana (Subtle Energy) reaches deprivation in the series of the cavities of the *nāḍis* (energy channels such as nerves, arteries and veins), due to the eating bad food, occupation of bad places, conduct of affairs in unsuitable time, evil of association with bad people and by the diminution or overfilling (of the system with the necessities of life). Thus, the role of mind could result in uneven pranic flow in the *nāḍis*; this is the start of a disease process.

Having said that the source of disease is the mind or the thoughts in the mind, we focus our attention on how thoughts are produced in the mind.

2.3. A.3 ORIGIN OF THOUGHTS FROM YOGASARA UPANISHAD

उद्रिक्तम् मनश्चित्तम् यत्प्रभावृत्तयः।

Udriktam manaścittam yatprabhāvṛttayaḥ।

(Yoga Sara Upanishad Mantra 7)

When mind is excited and memory is stimulated, then they jointly produce an impulse of energy that is a thought which is a *vritti* that is a tendency. Having understood what *Vriti is* we now focus on how to get rid of these *vrithis* using meditation.

2.3. A.4 YOGA AND DHYANA FROM PATANJALI YOGA SUTRAS

योगश्चित्तवृत्तिनिरोधः।

Yogaścittavṛttinirodhaḥ

(Patañjali Yoga Sūtra I.2)

Yoga is the restraint (cessation) of fluctuation (modification) of the mind.

तत्र प्रत्ययैकतानता ध्यानम् ।

Tatra pratyayaikatānatā dhyānam ।

(Patañjali Yoga Sūtra III.2)

Uninterrupted flow of the mind towards the object of focus is meditation.

2.3. A.5 MANIFEST AND UN-MANIFEST FORMS OF SOUND ENERGY

The Vedas form the sound-manifestation of *Ishvara.* That sound has four divisions. *Para* which finds manifestation only in *prana, Pasyanti* which finds manifestation in the mind, *Madhyama* which finds manifestation in the *indriyas,* and *Vaikhari* which finds manifestation in articulate expression.

Articulation is the last and grossest expression of divine sound-energy. The highest manifestation of sound-energy, the primal voice, the divine voice is *Para*. The *Para* voice becomes the root-ideas or germ-thoughts. It is the first manifestation of voice. In Para the sound remains in an undifferentiated form. *Para, Pasyanti, Madhyama & Vaikhari* are the various gradations of sound. *Madhyama* is the intermediate unexpressed state of sound. Its seat is the heart.

परा प्रत्यक्तितीरूपा पश्यन्ति परदेवता ।
मध्यमा वैखरी रुपा भक्त मानस हंसिका ॥

parā pratyakcitīrūpā paśyanti paradevatā /
madhyamā vaikharī rupā bhakta mānasa hamsika / /

(Lalitha Sahasranamavali, verse 82)

The verses above describe the mechanism of how sound is produced. An impulse of energy called *Para Vani* first manifests at the base of the spine (i.e. *Muladhara chakra*).The second form of this energy is *Pasyanti*. It manifests in the navel or the *Manipura Chakra*. *Yoginis* who have subtle inner vision can experience the *Pasyanti* state of a word which has colour and form, which is common for all languages and which has the vibrating homogeneity of sound. Indians, Europeans, Americans, Africans, Japanese, birds, beasts—all experience the same *Bhavana* or feeling of a thing in the *Pasyanti* state of voice or sound. Gesture is a sort of mute subtle language. It then gets transformed as *Madhyama* in the heart and then eventually as Vaikhari in the throat and mouth. This is the divine descent of one's voice. *Hamsa* in Sanskrit means a swan and represents the life breath or prāna, *Siva* and *Sakti* -- the twin aspects of reality. The incoming breath is called *Sa* and the outgoing one is called the *Ham*, together creating the word *Hamsa*. Air is exhaled with the sound *Sa* and inhaled with the sound *Ham*. Then reciting of the mantra *Hamsa* is continuous (Vijnana Bhairava, 155a).These verses and the others are included here to illustrate the various states and forms of energy just for the purpose of comprehending the complexity of subtle energy measurement and interpretation from a scientific perspective.

Yogis use mudra for channelizing energy from the base of the spine (*mooladhara*) to top of the head (*sahasrara*). The physical based *sadhana*, called hatha yoga is the most widely known type of yoga. Kriya yoga uses visualization, gesture and ritual worship. *Laya* yoga explains how the concentrated mind leads one to forget materialistic world and enter *Samadhi* state. The concept mudra is the physical equivalent/representation of a mantra. In hatha yoga, mudra is used for connecting two points of energy in our body.

2.3. A6 LITERATURE SURVEY ON MUDRAS

A mudra can be perceived as a hand posture with a specific pattern of finger configurations. Using modifiers, complex mudras could be constructed from relatively simple mudras (J.S.Vipin Indian Institute of Science Bangalore, 2008).

The word mudra is derived from Sanskrit word meaning that which dissolves duality and brings the deity and devotee together. Mudras are hand, body or eye positions that facilitate certain energy flows in the body and by forming a specific mudra one can induce certain states of mind and consciousness (Mohini, Hd, Tm, & Yhe, 2015).

It is customary that mudras are typically used during meditation and pranayama as a way to direct energy flow throughout the body. According to yoga philosophy, different areas of the hand stimulate specific areas of the brain. By applying light pressure to these areas of the hand, we will 'activate' corresponding region of the brain, similar to reflexology. Mudras also symbolize various feelings, emotions and representatives of various states of being (Mohini et al., 2015).

Hatha Yoga Pradipika deals with *bandhas* and mudras together and the ancient tantric texts also make no distinction between the two. *Bandhas* are extensively incorporated in mudra as well as in pranayama techniques. Their locking action, however, reveals them as a fundamentally important group of practices in their own right (Muktibodhananda S., 1993).

Prana mudra is formed by placing the tips of the thumb, ring finger, and little finger together. The other fingers remain extended. The Prana mudra claims to increase vitality, reduce fatigue and nervousness, and improve vision. It is used to mitigate eye diseases. On the mental-emotional level, it increases our staying power and assertiveness, healthy self-confidence, gives us the courage to start something new, and the strength to see things through. Clear eyes are also a sign of a mental outlook emphasizing clarity and a clear mind, which means clearly structured thoughts and ideas (Gertrud Hirschi, 2000).

2.4 REVIEW OF WORK IN THIS FIELD

Electro Photonic Image represents a spatially distributed glow areas having varying brightness characteristics. Compute analysis of it reveals general, local and sector based details.(Alexandrova, Fedoseev, & Korotkov, 2004).

The parameters that Electro Photonic Image (EPI) provides are indicative of psycho-emotional and physiological states. It provides information about the stress and normal behavior of organs and organ system (Deshpande, Madappa, & Korotkov, 2013).

The coronal discharge around a human fingertip using an EPI instrument were used to study the effect of textiles on the human body (Ciesielska, 2007).

Psycho-emotional condition is defined by our feelings and thoughts. One of the main questions is what is contained in the EPI data, physical or psychical component. The researchers showed that it is the mental state with the quality of psychic energy of man (Anufrieva, Anufriev, Starchenko, & Timofeev, 2014).

EPI technique has been used to monitor the patients by comparing their normal Electro Photonic emissions before and after surgeries (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011).

EPI based analysis on degree of arterial hypertension concluded that EPI could be used to screen patients of hypertension with different levels of severity (Aleksandrova, 2009).

Sympathetic and parasympathetic activities can be extracted from the EPI data. The quantitative difference between the two systems is given out as a parameter called the Activation Coefficient (AC) by the EPI software, it also gives Integral Entropy (IE) which is a measure of deviation from functional physiological state and psycho emotional balance (Cohly, Kostyuk, Isokpehi, & Rajnarayanan, 2009).

The EPI data has a large number of parameters. They are multidimensional and non-linear, which calls for a pattern based approach. Artificial neural networks have been used in the literature for bio-medical applications. The research on early prediction of diabetes using features of EPI Images also concluded that data can be used to train neural networks for classification of diseases for diagnosis (Shanmuga Priya & Rajesh, 2013).

Artificial neural networks were used to predict organ failures in patients with acute pancreatis (Wd Hong et al., 2013). ANN have also been used to predict the onset of diabetes (Pradhan & Sahu, 2011).

An artificial neural network (ANN) consists of a series of interconnecting parallel nonlinear elements with limited number of inputs and outputs (Wd Hong et al., 2013).

Artificial Neural Network analysis is more successful than the conventional statistical techniques in predicting clinical outcomes when the relationship between variables that determine the prognosis is complex, multidimensional and non-linear (Wan-dong Hong, Ji, Wang, Chen, & Zhu, 2011).

There have been very few studies in capturing subtle effects in an automated environment. This work uses the combination of EPI data and artificial neural network for recognizing the intervention (anapanasati meditation) and works as a frame work for intervention recognition as well as disease diagnosis.

The research work on "understanding type 2 diabetes at the *Prāṇamaya Kośa* level" (Bhavana Shrama, Alex Hankey, 2014) was an attempt to establish normative values of healthy volunteers and Type2 diabetes patients of varying ages of Indian population using the fundamental Electro Photonic Imaging (EPI) parameters.

The research work on "Study the effect of ānāpānasati meditation technique through Electro Photonic imaging parameters" (Guru Deo, Itagi, Srinivasan, & Kushwah, 2015) used EPI

instrument to study the changes in fundamental EPI parameters with short term and long term practice of meditation. This work concluded that the effect of meditation was more profound in female population in comparison to males.

Work on "Efficacy of Integrated Yoga Practices on healthy people using Electro Photonic Imaging Technique" (Kuldeep,2016) established the fact that integrated yoga module (IYM) reduces stress in both males and females after a 4 week practice using EPI parameter Activation Coefficient (AC).

Electro Photonic Imaging (EPI) is subtle energy diagnostic tool which is valid and reliable tool to assess early effects of Mobile Phone-Induced Electromagnetic Field radiations (Hemant Bhargav, T.M.Srinivasan,S.Varambally,B.N.Gangadhar,Prasad KokaHealth, 2015).

The above work established the fact that EPI instrument is capable of detecting changes in the bio-energy in a diseased condition due to a mobile phone induced electromagnetic intervention and after Yoga or a Meditation practice.

In this study we have used a Mudra practice to see if EPI instrument is capable of detecting the subtle changes caused by Prana Mudra. The present study is an attempt to detect a pattern of change and come up with an automated framework using neural network to detect this pattern for each of the practices like anapanasati meditation, Prana mudra and disease condition.

There is a need for an automated study to observe the variations in all parameters with respect to a diseased condition to diagnose the same (Dey & Bajpai, 2008).The combination of EPI and neural network could be used as a framework for diagnosing diabetes. The number of EPI parameters are large and manual inspection of all parameters is not practical. Statistical Analysis is used to establish the gross level changes. Neural network is required to capture and learn the individual changes for diagnosis/detection at an individual sample level.

This is the first study using EPI data and artificial neural network to classify diabetic and non-diabetic population. This study used three different sets of data, namely data corresponding to the organs and organs systems, data for the chakras and data corresponding to the meridians. In this study we have also explored the possibility of detecting the changes in bio-energy due to a practice called *Prāṇa mudra* and also for the anapanasati meditation as two different studies.

2.4.1 CONCLUSION

EPI has been used in diagnosing diseases, detecting the effect of radiation due to mobile phones and studying the effect of meditation and yoga practices. All the studies have made an attempt to identify the EPI parameter that showed statistically significant changes and prove that EPI could be used for their chosen application.

The main focus there was to establish that there is some change in EPI parameters in healthy and disease condition and during meditation and yoga practice.

This work is an attempt to combine the EPI based analysis with ANN by detecting the patterns in various situations and training the neural network for classification of these patterns.

In this work we have used Meditation and Mudra practices for training the neural network and have used diabetes as a disease condition. The emphasis here is to make the EPI instrument a diagnostic tool for disease diagnosis and intervention recognition. Extending this concept, it could be possible to come up with EPI signatures for various disease conditions and yogic practices. Studying these signatures will pave way for mapping the disease condition with the corresponding yogic practice to cure the same.

2.5 SUMMARY

Disease arises because of contemplating and dwelling too much on the thoughts in the mind. Meditation leads to a thoughtless state and could be used to relax, de-stress or heal the body. It therefore becomes important to understand the mechanisms of the origin of thoughts and techniques of getting rid of the same.

A mudra is a physical equivalent/representation of a mantra. In hatha yoga mudra is used for connecting two points of energy in our body. As an example Jalandar bandh and Udyana bandh applied together allow the flow of präna from the naval to throat region (i.e. Manipura chakra to Vishudha chakra).

Anapanasati meditation uses the technique of monitoring the breath and has an effect on the subtle energy. The EPI instrument is capable of measuring the subtle energy changes caused by the meditation.

Mantra is energy in sound form. *Lalitha Sahasranama* has some insight into how this form manifests and therefore the corresponding verses were included in our literature review.

In short this review connects the various dots together to understand the source of disease and the mechanisms to prevent the same by using yogic practices like meditation and mudra.

There are 84 EPI parameters corresponding to the meridians of the various organs and organ systems. The changes in these parameters cannot be easily detected for either monitoring the health or for understanding the impact of a yogic practice like asana, pranayama, dhyana or mudra. This therefore calls for an automated pattern recognition technique to identify a set of EPI parameters as a signature to classify a practice or a health condition.

CHAPTER 3

3.0 REVIEW OF SCIENTIFIC LITERATURE

3.1 LITERATURE SURVEY ON EPI AND ITS APPLICATIONS

Electro Photonic Imaging (EPI) instrument is used to capture coronal discharges at the fingertips induced by a pulsed electrical signal (10– 15kV, 1024Hz, 10 microsecond) on a glass plate. The images are captured by a camera under the glass plate. This device produces a type of digital high-voltage electrophotography that is based on the Kirlian effect (Rubik & Brooks, 2005). EPI is a non-invasive technique and is hazard free (Korotkov, Matravers, Orlov & Williams, 2010).

Electro Photonic Image represents a spatially distributed glow area having varying brightness characteristics; it reveals general, local and sector based details (Alexandrova et al., 2004). One of the main questions is what EPI data contains, namely physical or psychological component. Depending on its use (either with filter or without filter) EPI shows physiological or psychological conditions.

The study on correlation of EPI parameters with Fasting Blood Sugar (FBS) concluded that FBS correlates differently in the normal, pre-diabetic, and diabetic groups (Bhat & Deo, Guru, Ramesh Mavathur, 2016)

A study on the characteristics of Indian diabetic population concluded that differences between diabetic and healthy groups increase with increasing duration of the disease (Bhavana Shrama, Alex Hankey, 2014).

The work on altered brain physiology and stem cell functioning due to mobile phone/cell tower radiations, its association with increased cancer risk explored the use of EPI in detecting Electro Magnetic Field induced changes on human bio-electromagnetic (BEM) field (Hemant Bhargav, T.M.Srinivasan,S.Varambally,B.N.Gangadhar,Prasad KokaHealth, 2015).

Study on long term and short term anapanasati meditation practice concluded that in both Long term as well as Short term meditation practices lower values of stress (activation coefficient) were found in woman meditators as compared to men (Guru Deo, Itagi R. Kumar, 2015).

The effect of Indian music on the autonomous imbalance on diabetic subjects concluded that music does have a positive impact on autonomic balance (Rao & Nagendra, 2014).

A study on autistic children concluded that EPI instrument is promising from a bio-metric perspective (Kostyuk N, Rajnarayanan R V, Isokpehi RD, 2010).

Research on early prediction of diabetes using features of Electro Photonic Imaging also concluded that data can be used to train neural networks for classification of diseases for diagnosis (Shanmuga Priya & Rajesh, 2013).

There are several papers on use of neural networks in disease diagnosis one of them is in predicting the onset of diabetes using neural networks with a set of attributes as inputs to the neural network (Pradhan & Sahu, 2011). There is exclusive survey on bio-medical applications of neural networks that has a comprehensive description of various papers.

3.2 LITERATURE SURVEY ON DIABETES AND ITS DIAGNOSIS

The study on Type 2 Diabetes Mellitus (T2DM) by Sharma et al. in 2014 demonstrated that the two groups, T2DM and healthy subjects, have significant differences in EPI parameters for cardiovascular, endocrine, immune and urogenital systems. Differences between diabetic and healthy groups showed increasing trend of EPI parameters with increase in duration of the disease. Dividing the diabetes group according to their pathological duration revealed systematic increases in values in all organs and organ systems (Sharma, Hankey, & Nagendra, 2014).

Diabetes is defined as hyperglycemia for a long term. Abnormal glucose metabolism leading to hyperglycemia defines diabetes ("How Do We Define Cure of Diabetes ?" 2009).Diabetes Mellitus is a family of diseases with increased levels of blood sugar due to defects in insulin action or secretion associated with long term damage or failure of various organs like eyes kidneys, blood vessels and nerves (American Diabetes Association, 2011).

Presence of sugar in the blood for a long time leads to various disorders like thickening of the arterial walls causing blood pressure to increase and organs and organ systems becoming weaker and non-functional due to non-availability of the required quantity of glucose (Mezuk, Eaton, Albrecht, & side Golden, 2008).Obesity, high fat diet and sedentary lifestyle contribute to the prevalence of type2 diabetes (Pradhan & Sahu, 2011). Diabetes is a lifestyle non-communicable (*Ädhi ja -samanya*) disorder.

Brain's role in glucose homeostasis was proposed by scientists in the nineteenth century; however the current research diagnosis and treatment is based on the functioning of pancreatic islets. Recent works indicates that brain controlled glucose regulation can improve glucose homeostasis (Woods et al., 2013).

It is important to diagnose diabetes early to prevent further deterioration of the organs and organ systems. Electro Photonic Imaging (EPI) studies on Qigong suggests that EPI could be used for early diagnosis, earlier than the conventional mechanisms of diagnosis (Rubik & Brooks, 2005). Diagnosing diabetes is not a onetime event, treatment of diabetes leads to processes like Self-monitoring of blood glucose. The process of frequent blood sampling is costly, painful and leads to finger insensitivity (Vadis, 2011).

Analysis on degree of arterial hypertension concluded that EPI could be used to screen patients of hypertension with different levels of severity (Aleksandrova, 2009).

Diagnosis of diabetes and its treatment need to be more holistic. The EPI instrument generates chakra based data which is more holistic. It also generates coronary discharges corresponding to the meridians as well as the organs and organ systems. The chakras can be thought of as energy centers, these energy centers are located on the spinal column starting from the base of the spine to the top of the head (Deshpande et al., 2013).

There is a need for an automated study to observe the variations in all parameters with respect to a diseased condition to diagnose the same (Dey & Bajpai, 2008). The combination of EPI and neural network could be used as a framework for diagnosing diabetes.

In this work we use artificial neural network as a machine learning tool and have explored the possibility of coming up with a frame work for disease diagnosis and to detect the effect of a yogic practice using EPI.

3.3 LITERATURE SURVEY ON ANAPANASATI MEDITATION

Among the various meditation practices, there are three styles that are commonly studied. One style, focused attention (FA) meditation, entails voluntary focusing of attention on a chosen object. The other style, open monitoring (OM) meditation, involves non- reactive monitoring of the content of experience from moment to moment. The potential regulatory functions of these practices on attention and emotion processes could have a long-term impact on the brain and behavior (Lutz, Slagter, Dunne, & Davidson, 2008).

A third type is Transcendental Meditation (TM) which is a specific form of mantra meditation developed by Maharishi Mahesh Yogi. The meditation practice involves the use of a mantra and is practiced for 15–20 minutes twice per day while sitting with one's eyes closed. Beginning in 1965, the Transcendental Meditation technique has been incorporated into certain schools, universities, corporations, and prison programs in the USA, Latin America, Europe and India.

Sanskrit meaning of *ānāpānasati*, is "mindfulness of breathing" ana means inhalation pana means exhalation sati is becoming aware of or mindful of, anapanasati means to feel the sensations caused by the movements of the breath in the body as is practiced in the context of

mindfulness. According to tradition, Anapanasati was originally taught by Gautama Buddha in several suttas including the *Ānāpānasati Sutta*. It is a form of Buddhist meditation now common to Tibetan, Zen, Tiantai and Theravada Buddhism as well as western mindfulness programs.

Anapanasati is a meditation in which one obtains mastery over one's unruly mind through objective observation of one's own natural and normal breath. This practice of anapanasati meditation helps to sharpen the mind and to induce peace of mind to participants for the next step of *Vipasana* meditation. *Vipassana* means to observe things as they really are in their natural and true characteristics of impermanence (Guru Deo et al., 2015).

There are numerous neurophysiological studies on meditation; some of the studies were online monitoring mechanisms using EEG and HRV for monitoring individual traits (Murata et al., 2004).

There have been fMRI studies for understanding the areas of the brain that are typically more active during rest than during active task performance (Mars et al., 2012).

In this study, our aim was to detect the changes in EPI parameters due to anapanasati meditation using artificial neural network.

3.4 LITERATURE SURVEY ON BIO MEDICAL APPLICATION OF NEURAL NETWORKS

Artificial Neural Networks are extensively used in medical research. At the moment, the research is mostly on modelling parts of the human body and recognizing diseases from various scans (e.g. cardiograms, CAT scans, ultrasonic scans, etc.) (Christos & Dimitrios 1996).

Neural networks are ideal in recognizing diseases using scans since there is no need to provide a specific algorithm on how to identify the disease. Neural networks learn by example so the details of how to recognize the disease are not needed. What is needed is a set of examples that are representative of all the variations of the disease. The quantity of examples is not as important as the 'quality'. The examples need to be selected very carefully if the system is to perform reliably and efficiently (Christos & Dimitrios 1996).

The table 3.4 shows a list of papers along with the domain published just in the year 2015. There were 59 publications related to bio-medical applications of neural networks. Our study is the first of its kind using EPI parameters and Neural networks for disease diagnosis (K Shiva Kumar, TM Srinivasan, HR Nagendra & P Marimuthu, 2016).

Table 3.4 List of papers on Bio-Medical Application of Classifiers (Neural Network =1, Support Vector Machine =2, Fuzzy Logic =3, others =4)

S. No	Paper Title, Abstract and Journal Name	Domain	Data	Classifiers.
1	El-Nagar AM, El-Bardini M. Interval type-2 fuzzy neural network controller for a multivariable anesthesia system based on a hardware-in-the-loop simulation. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 61(1):1–10. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00021-9/abstract	Anesthesia	Specific set of Parameters	1
2	Bárdossy A, Blinowska A, Kuzmicz W, Ollitrault J, Lewandowski M, Przybylski A, et al. Fuzzy logic-based diagnostic algorithm for implantable cardioverter defibrillators. Artif Intell Med [Internet]. Elsevier; 2015 May 1;60(2):113–21. Available from:	Heart	Specific set of Parameters	3

	http://www.aiimjournal.com/article/S0933-3657(13)00164-4/abstract			
3	Cruz-Ramírez M, Hervás-Martínez C, Fernández JC, Briceño J, de la Mata M. Predicting patient survival after liver transplantation using evolutionary multi-objective artificial neural networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1;58(1):37–49. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00012-2/abstract	Liver	Specific set of Parameters	1
4	De Carvalho Filho AO, de Sampaio WB, Silva AC, de Paiva AC, Nunes RA, Gattass M. Automatic detection of solitary lung nodules using quality threshold clustering, genetic algorithm and diversity index. Artif Intell Med [Internet]. Elsevier; 2015 May 1;60(3):165–77. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00154-1/abstract	Lung	Specific set of Parameters	2
5	Dhondalay GK, Lawrence K, Ward S, Ball G, Hoare M. Relationship between preparation of cells for therapy and cell quality using artificial neural network analysis. Artif Intell Med [Internet]. Elsevier; 2015 May 1;62(2):119–27. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00083-9/abstract	Cell Membrane	Specific set of Parameters	1
6	Di Nuovo AG, Nuovo S Di, Buono S. Intelligent quotient estimation of mental retarded people from different psychometric instruments using artificial neural networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1;54(2):135–45. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00145-X/abstract	Psychometric Tests	Specific set of Parameters	1

7	Hung W-L, Chen D-H, Yang M-S. Suppressed fuzzy-soft learning vector quantization for MRI segmentation. Artif Intell Med [Internet]. Elsevier; 2015 May 1;52(1):33–43. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00005-4/abstract	MRI	Specific set of Parameters	1
8	Jerez JM, Molina I, García-Laencina PJ, Alba E, Ribelles N, Martín M, et al. Missing data imputation using statistical and machine learning methods in a real breast cancer problem. Artif Intell Med [Internet]. Elsevier; 2015 May 1;50(2):105–15. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00067-9/abstract	Breast Cancer	Specific set of Parameters	1
9	Ling SH, Nguyen HT. Natural occurrence of nocturnal hypoglycemia detection using hybrid particle swarm optimized fuzzy reasoning model. Artif Intell Med [Internet]. Elsevier; 2015 May 1;55(3):177–84. Available from: http://www.aiimjournal.com/article/S0933-3657(12)00049-8/abstract	Diabetes	ECG	3
10	Monte-Moreno E. Non-invasive estimate of blood glucose and blood pressure from a photoplethysmograph by means of machine learning techniques. Artif Intell Med [Internet]. Elsevier; 2015 May 1;53(2):127–38. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00056-X/abstract	Diabetes	Photoplethysmograph	1
11	Pereira C, Veiga D, Mahdjoub J, Guessoum Z, Gonçalves L, Ferreira M, et al. Using a multi-agent system approach for microaneurysm detection in fundus images. Artif Intell Med [Internet]. Elsevier; 2015 May 1;60(3):179–88. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00165-6/abstract	Diabetes	Fundus Image	4

12	Pombo N, Araújo P, Viana J. Knowledge discovery in clinical decision support systems for pain management: A systematic review. Artif Intell Med [Internet]. Elsevier; 2015 May 1;60(1):1–11. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00157-7/abstract	Clinical Decision Support System	Survey Paper	4
13	Velikova M, Lucas PJF, Samulski M, Karssemeijer N. On the interplay of machine learning and background knowledge in image interpretation by Bayesian networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 57(1):73–86. Available from: http://www.aiimjournal.com/article/S0933-3657(12)00152-2/abstract	Breast Cancer	Mammogram	4
14	Zambanini S, Sablatnig R, Maier H, Langs G. Automatic image-based assessment of lesion development during hemangioma follow-up examinations. Artif Intell Med [Internet]. Elsevier; 2015 May 1;50(2):83–94. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00094-1/abstract	Hemangioma	Digital Image	4
15	Adankon MM, Dansereau J, Labelle H, Cheriet F. Noninvasive classification system of scoliosis curve types using least-squares support vector machines. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 56(2):99–107. Available from: http://www.aiimjournal.com/article/S0933-3657(12)00108-X/abstract	Scoliosis	Digital Image	2
16	Ahmed MU, Begum S, Funk P, Xiong N, von Scheele B. A multi-module case-based biofeedback system for stress treatment. Artif Intell Med [Internet]. Elsevier; 2015 May 1;51(2):107–15. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00117-X/abstract	Clinical Decision Support System	Sensor Signal	4

17	Armañanzas R, Bielza C, Chaudhuri KR, Martinez-Martin P, Larrañaga P. Unveiling relevant non-motor Parkinson's disease severity symptoms using a machine learning approach. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 58(3):195–202. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00054-7/abstract	Parkinson	Hoehn & Yahr index	4
18	Jalali A, Ghaffari A, Ghorbanian P, Nataraj C. Identification of sympathetic and parasympathetic nerves function in cardiovascular regulation using ANFIS approximation. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 52(1):27–32. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00003-0/abstract	Heart	Physiological Parameters	4
19	Krakovská A, Mezeiová K. Automatic sleep scoring: A search for an optimal combination of measures. Artif Intell Med [Internet]. Elsevier; 2015 May 1;53(1):25–33. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00074-1/abstract	Polysomnography	EEG, ECG, EMG, EOG	4
20	Lee J, Steele CM, Chau T. Classification of healthy and abnormal swallows based on accelerometry and nasal airflow signals. Artif Intell Med [Internet]. Elsevier; 2015 May 1;52(1):17–25. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00032-7/abstract	Dysphagia	Sensor Signal	4
21	Li B, Meng MQ-H, Lau JYW. Computer-aided small bowel tumor detection for capsule endoscopy. Artif Intell Med [Internet]. Elsevier; 2015 May 1;52(1):11–6. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00004-2/abstract	Small Bowel	Endoscopy	1

22	Li D-C, Liu C-W, Hu SC. A fuzzy-based data transformation for feature extraction to increase classification performance with small medical data sets. Artif Intell Med [Internet]. Elsevier; 2015 May 1;52(1):45–52. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00018-2/abstract	General	Medical Data Set	3
23	Marrocco C, Molinara M, D'Elia C, Tortorella F. A computer-aided detection system for clustered microcalcifications. Artif Intell Med [Internet]. Elsevier; 2015 May 1;50(1):23–32. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00039-4/abstract	Breast Cancer	Mammogram	4
24	Mukhopadhyay S, Palakal M, Maddu K. Multi-way association extraction and visualization from biological text documents using hyper-graphs: Applications to genetic association studies for diseases. Artif Intell Med [Internet]. Elsevier; 2015 May 1;49(3):145–54. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00029-1/abstract	Genetics	Physiological Parameters	4
25	Oliva J, Serrano JI, del Castillo MD, Iglesias Á. A methodology for the characterization and diagnosis of cognitive impairments—Application to specific language impairment. Artif Intell Med [Internet]. Elsevier; 2015 May 1;61(2):89–96. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00038-4/abstract	Cognition	Cognitive Parameters	4
26	Rakotomamonjy A, Petitjean C, Salaün M, Thiberville L. Scattering features for lung cancer detection in fibered confocal fluorescence microscopy images. Artif Intell Med [Internet]. Elsevier; 2015 May 1;61(2):105–18. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00053-0/abstract	Lung Cancer	fibered confocal fluorescence microscopy	4

27	Santos PE, Thomaz CE, dos Santos D, Freire R, Sato JR, Louzã M, et al. Exploring the knowledge contained in neuroimages: Statistical discriminant analysis and automatic segmentation of the most significant changes. Artif Intell Med [Internet]. Elsevier; 2015 May 1;49(2):105–15. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00030-8/abstract	General	Medical Data Set	4
28	Schipper JD, Dankel II DD, Arroyo AA, Schauben JL. A knowledge-based clinical toxicology consultant for diagnosing single exposures. Artif Intell Med [Internet]. Elsevier; 2015 May 1; 55(2):87–95. Available from: http://www.aiimjournal.com/article/S0933-3657(12)00046-2/abstract	Clinical Decision Support System	Medical Data Set	4
29	Soda P, Mazzoleni S, Cavallo G, Guglielmelli E, Iannello G. Human movement onset detection from isometric force and torque measurements: A supervised pattern recognition approach. Artif Intell Med [Internet]. Elsevier; 2015 May 1;50(1):55–61. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00040-0/abstract	Rehabilitation	Sensor Signal	4
30	Soda P, Onofri L, Iannello G. A decision support system for Crithidia Luciliae image classification. Artif Intell Med [Internet]. Elsevier; 2015 May 1;51(1):67–74. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00070-9/abstract	Systemic Lupus Erythematosus	Digital Image	4
31	Tsipouras MG, Tzallas AT, Rigas G, Tsouli S, Fotiadis DI, Konitsiotis S. An automated methodology for levodopa-induced dyskinesia: Assessment based on gyroscope and accelerometer signals. Artif Intell Med [Internet]. Elsevier;	Parkinson	Sensor Signal	4

	2015 May 1; 55(2):127–35. Available from: http://www.aiimjournal.com/article/S0933-3657(12)00032-2/abstract			
32	Wang Y-Y, Sun Y-N, Lin C-CK, Ju M-S. Segmentation of nerve fibers using multi-level gradient watershed and fuzzy systems. Artif Intell Med [Internet]. Elsevier; 2015 May 1;54(3):189–200. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00151-5/abstract	Nervous System	Digital Image	4
33	Yang X, Cao A, Song Q, Schaefer G, Su Y. Vicinal support vector classifier using supervised kernel-based clustering. Artif Intell Med [Internet]. Elsevier; 2015 May 1;60(3):189–96. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00005-0/abstract	Breast Cancer	Mammogram	3
34	Yin L, Xu G, Torii M, Niu Z, Maisog JM, Wu C, et al. Document classification for mining host pathogen protein–protein interactions. Artif Intell Med [Internet]. Elsevier; 2015 May 1;49(3):155–60. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00035-7/abstract	General	Survey	3
35	Bichindaritz I, Montani S. Advances in case-based reasoning in the health sciences. Artif Intell Med [Internet]. Elsevier; 2015 May 1;51(2):75–9. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00002-9/abstract	Clinical Decision Support System	Medical Data Set	4
36	Cattinelli I, Bolzoni E, Chermisi M, Bellocchio F, Barbieri C, Mari F, et al. Computational intelligence for the Balanced Scorecard: Studying performance trends of hemodialysis clinics. Artif Intell Med [Internet]. Elsevier; 2015 May 1;58(3):165–73. Available from:	General	General	4

	http://www.aiimjournal.com/article/S0933-3657(13)00068-7/abstract			
37	Depeursinge A, Racoceanu D, Iavindrasana J, Cohen G, Platon A, Poletti P-A, et al. Fusing visual and clinical information for lung tissue classification in high-resolution computed tomography. Artif Intell Med [Internet]. Elsevier; 2015 May 1;50(1):13–21. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00038-2/abstract	Lung	Computer Tomography	3
38	Hayashi Y, Setiono R, Yoshida K. A comparison between two neural network rule extraction techniques for the diagnosis of hepatobiliary disorders. Artif Intell Med [Internet]. Elsevier; 2015 May 1;20(3):205–16. Available from: http://www.aiimjournal.com/article/S0933-3657(00)00064-6/abstract	Liver	Medical Data Set	1
39	Kim S. Data mining for the study of disease genes and proteins. Artif Intell Med [Internet]. Elsevier; 2015 May 1;49(3):133–4. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00034-5/abstract	Genetics	Medical Data Set	4
40	Laippala V, Viljanen T, Airola A, Kanerva J, Salanterä S, Salakoski T, et al. Statistical parsing of varieties of clinical Finnish. Artif Intell Med [Internet]. Elsevier; 2015 May 1;61(3):131–6. Available from: http://www.aiimjournal.com/article/S0933-3657(14)00019-0/abstract	Clinical Decision Support System	Medical Data Set	4
41	Li S-T, Chen C-C, Huang F. Conceptual-driven classification for coding advise in health insurance reimbursement. Artif Intell Med [Internet]. Elsevier; 2015 May 1;51(1):27–41. Available from:	Clinical Decision Support System	Medical Data Set	3

	http://www.aiimjournal.com/article/S0933-3657(10)00122-3/abstract			
42	Lima CAM, Coelho AL V. Kernel machines for epilepsy diagnosis via EEG signal classification: A comparative study. Artif Intell Med [Internet]. Elsevier; 2015 May 1;53(2):83–95. Available from: http://www.aiimjournal.com/article/S0933-3657(11)00104-7/abstract	Epilepsy	EEG	3
43	Linkens DA, Vefghi L. Recognition of patient anaesthetic levels: neural network systems, principal components analysis, and canonical discriminant variates. Artif Intell Med [Internet]. Elsevier; 2015 May 1;11(2):155–73. Available from: http://www.aiimjournal.com/article/S0933-3657(97)00028-6/abstract	Anesthesia	Physiological Parameters	1
44	Marble RP, Healy JC. A neural network approach to the diagnosis of morbidity outcomes in trauma care. Artif Intell Med [Internet]. Elsevier; 2015 May 1;15(3):299–307. Available from: http://www.aiimjournal.com/article/S0933-3657(98)00059-1/abstract	Trauma	Medical Data Set	1
45	Milenković J, Hertl K, Košir A, Žibert J, Tasič JF. Characterization of spatiotemporal changes for the classification of dynamic contrast-enhanced magnetic-resonance breast lesions. Artif Intell Med [Internet]. Elsevier; 2015 May 1;58(2):101–14. Available from: http://www.aiimjournal.com/article/S0933-3657(13)00036-5/abstract	Breast Cancer	MRI	3
46	Mobley BA, Schechter E, Moore WE, McKee PA, Eichner JE. Predictions of coronary artery stenosis by artificial neural network. Artif Intell Med [Internet]. Elsevier; 2015 May 1;18(3):187–203. Available from:	Heart	Angiogram	1

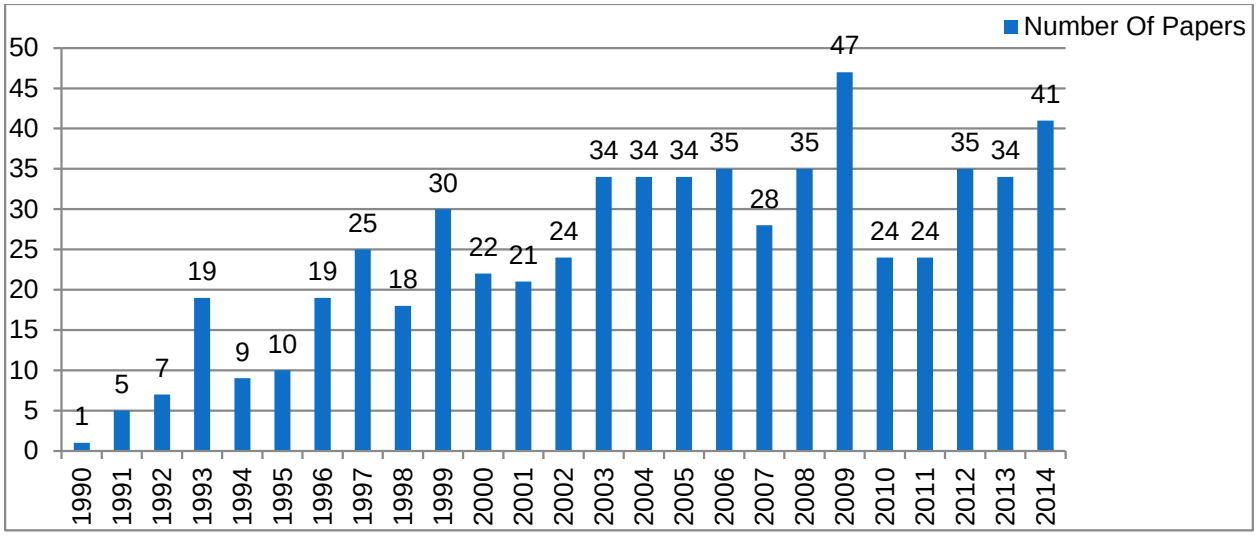
	http://www.aiimjournal.com/article/S0933-3657(99)00040-8/abstract			
47	Nanni L, Lumini A, Brahnam S. Local binary patterns variants as texture descriptors for medical image analysis. Artif Intell Med [Internet]. Elsevier; 2015 May 1;49(2):117–25. Available from: http://www.aiimjournal.com/article/S0933-3657(10)00027-8/abstract	General	General	3
48	Omlin CW, Snyders S. Inductive bias strength in knowledge-based neural networks: application to magnetic resonance spectroscopy of breast tissues. Artif Intell Med [Internet]. Elsevier; 2015 May 1;28(2):121–40. Available from: http://www.aiimjournal.com/article/S0933-3657(03)00062-9/abstract	Breast Cancer	MRI	1
49	Pesonen E, Eskelinen M, Juhola M. Treatment of missing data values in a neural network based decision support system for acute abdominal pain. Artif Intell Med [Internet]. Elsevier; 2015 May 1;13(3):139–46. Available from: http://www.aiimjournal.com/article/S0933-3657(98)00027-X/abstract	Appendicitis	Medical Data Set	1
50	Ulbricht C, Dorffner G, Lee A. Neural networks for recognizing patterns in cardiotocograms. Artif Intell Med [Internet]. Elsevier; 2015 May 1;12(3):271–84. Available from: http://www.aiimjournal.com/article/S0933-3657(97)00052-3/abstract	obstetrics	Cardiotocogram	1

51	Wiegerinck W. Clinical Applications of Artificial Neural Networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1;27(2):223–6. Available from: http://www.aiimjournal.com/article/S0933-3657(02)00081-7/abstract	Book	Book	1
52	Wiegerinck WAJ. Functional Networks with Applications. A Neural-Based Paradigm, by E. Castillo, A. Cobo, J.M. Gutiérrez and R.E. Pruneda, Kluwer Academic Publishers, Dordrecht, 1998. NLG 300, US$132, GB£90, HB, 328 pp, ISBN: 0-7923-8332-X. Artif Intell Med [Internet]. Elsevier; 2015 May 1;18(3):267–70. Available from: http://www.aiimjournal.com/article/S0933-3657(99)00044-5/abstract	Book	Book	1
53	Zhou Z-H. Artificial Neural Networks in Biomedicine. Artif Intell Med [Internet]. Elsevier; 2015 May 1;25(2):211–4. Available from: http://www.aiimjournal.com/article/S0933-3657(02)00016-7/abstract	Book	Book	1
54	Zhou Z-H, Jiang Y, Yang Y-B, Chen S-F. Lung cancer cell identification based on artificial neural network ensembles. Artif Intell Med [Internet]. Elsevier; 2015 May 1;24(1):25–36. Available from: http://www.aiimjournal.com/article/S0933-3657(01)00094-X/abstract	Lung Cancer	Digital Image	1
55	Abbass HA. An evolutionary artificial neural networks approach for breast cancer diagnosis. Artif Intell Med [Internet]. Elsevier; 2015 May 1;25(3):265–81. Available from: http://www.aiimjournal.com/article/S0933-3657(02)00028-3/abstract	Breast Cancer	Digital Image	1
56	Allen R, Smith D. Neuro-fuzzy closed-loop control of depth of anaesthesia. Artif Intell Med [Internet]. Elsevier; 2015 May 1;21(1):185–91. Available from:	Anesthesia	EEG	1

	http://www.aiimjournal.com/article/S0933-3657(00)00084-1/abstract			
57	Azuaje F, Dubitzky W, Lopes P, Black N, Adamson K, Wu X, et al. Predicting coronary disease risk based on short-term RR interval measurements: a neural network approach. Artif Intell Med [Internet]. Elsevier; 2015 May 1;15(3):275–97. Available from: http://www.aiimjournal.com/article/S0933-3657(98)00058-X/abstract	Heart	ECG	1
58	Bologna G. A model for single and multiple knowledge based networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1;28(2):141–63. Available from: http://www.aiimjournal.com/article/S0933-3657(03)00055-1/abstract	Blood Cancer	Electrophoresis	1
59	Camps-Valls G, Martínez-Sober M, Soria-Olivas E, Magdalena-Benedito R, Calpe-Maravilla J, Guerrero-Martínez J. Foetal ECG recovery using dynamic neural networks. Artif Intell Med [Internet]. Elsevier; 2015 May 1;31(3):197–209. Available from: http://www.aiimjournal.com/article/S0933-3657(04)00050-8/abstract	obstetrics	ECG	1

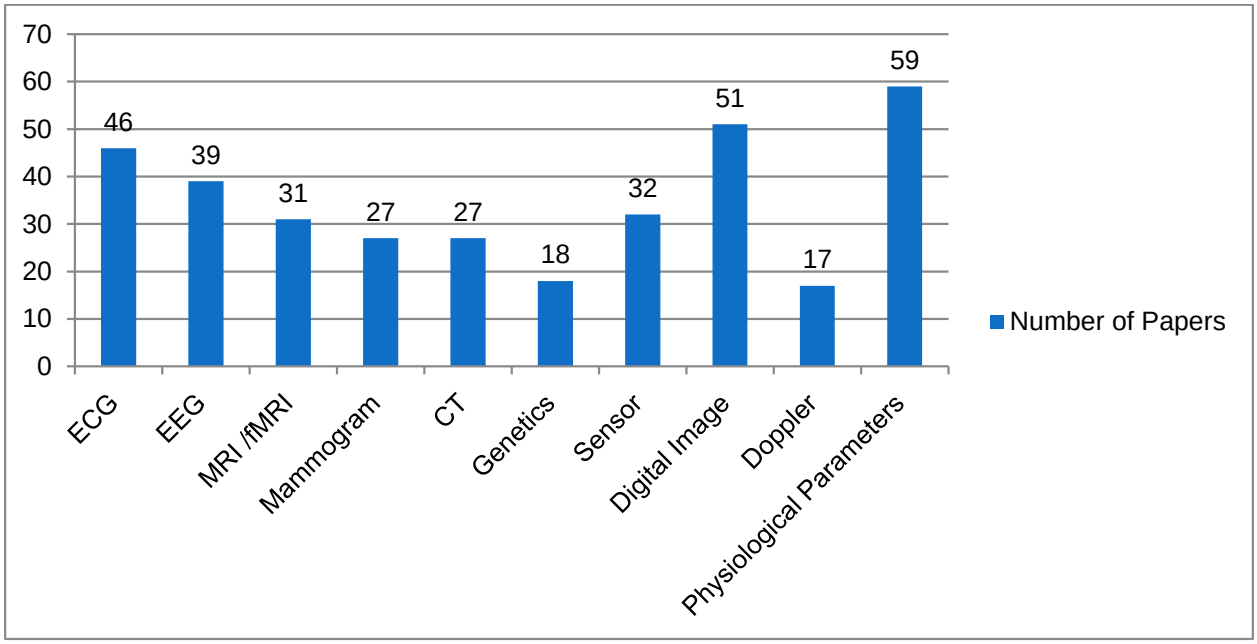
The graphs in Fig 3.1 and 3.2 show the number of research papers published using artificial neural network for bio-medical applications.

Fig 3.1 Number of Papers Published year-wise



The graph below shows the application areas of neural network in each domain. As an example there were 46 paper using ECG data to classify cardiac problems. On similar lines neural networks were used to take inputs from the various Scans like EEF, MRI, CT Doppler etc. and classify the subjects based on the scan results.

Fig 3.2 Number of Papers Published in different domains



3.5 SUMMARY OF RECENT STUDIES WITH EPI

Table - 3.5 Studies On EPI, Meditation, Mudra & Diabetes				
Author and year of publication	**Sample size (n)**	**Design**	**Variables studied**	**Findings**
Guru Deo et al., 2016	482	Pre-Post Study	Four fundamental EPI variables	Used the EPI instrument to study the gender related cumulative effects of Anapanasati meditation. This work concluded that the effect of meditation was more on female population in comparison to male.
Romesh Kumar Bhat, Guru Deo, Ramesh Mavathur, T.M. Srinivasan, 2016	102	Correlation study of EPI variables with Fasting Blood Sugar	EPI Variables Pancreas, liver, Immuse system, Kidneys, Coronary vessels, cerebral vessels, Area, Intensity, Entropy, Fractality and Form Coefficient	Studied the correlation of EPI variables with Fasting Blood sugar values for pre-diabetics, diabetic and healthy subjects. Established a significant relationship of FBS with pancreas and right kidney for pre-diabetic. In the case of normal participants, a significant relationship of FBS was found with area and form coefficient of the EPI gram.

Kuntal Ghosh, Alex Hankey, TM Srinivasan, 2016	52	Pre-Post with control and repeated measures	Jing-well Acupuncture meridian points	Sitting in Lotus Posture for 30 min showed increases in subtle energy levels in all acupuncture meridians; those sitting in chair produced Universal decreases. Results for 10 and 20 min of sitting in lotus posture showed how these changes in energy values took time to build up with increasing time.
T. Indira Rao & H.R Nagendra 2014	29	Single group pre-post with repeated measures	EPI variables, Area, Intensity, Entropy, and Activation Coefficient	The effect of Indian music on the autonomous imbalance of the patients with DM2 was studied and concluded that music does have an effect.
B. Shanmuga Priya & R. Rajesh (2013)	41 training records and 19 for testing	Neural network based classifier for classifying diabetic and non-diabetic subjects	8 EPI variables of the ring finger	Explored the possibility of pre-detection of diabetes using EPI. Sample size of diabetic subjects was not statistically significant.
Sharma, Hankey & Nagendra (2014)	138 T2DM people 84 healthy people	Two groups comparative design	EPI Screening, All variables related to Organs and Organ systems as given by the EPI Software.	Significant differences were observed between the two groups in the cardiovascular, endocrine, immune and urogenital systems. Differences between diabetic and healthy groups increase with increasing duration of the disease. Population norms require further investigation.
Rao, Kushwah& Srinivasan (2014)	12 students 5 singers and accompanists	Mixed Method Design	Area, intensity and entropy	EPI parameters- area and intensity increased and the entropy decreased the decrease was not significant in the students. The same

				trend is found in the singers and accompanists.
Korotkov et al. (2012)	33 healthy subjects	Single group pre-test and post-test	EPI gram image area, average intensity, and activation coefficient	There was increase in fingertip florescence area and average intensity, reduction in stress levels, and improved blood pressure measurements.
Kostyuk, Rajnarayanan, Isokpehi & Cohly (2010)	6 autistic participants their parents and siblings.7 control and their parents	Experimental design with Control	48 acupuncture point's assessments at both psycho-emotional physiological levels.	The activity of the sympathetic autonomic nervous system is significantly altered in children with autism as measure through the EPI grams.

CHAPTER 4

4.0 AIM AND OBJECTIVES OF RESEARCH

4.1 AIMS OF THE STUDY

To study the effect of the pattern of variation of EPI parameters using neural networks for the following:

- In diseased condition, specifically diabetes.
- Variation in EPI parameters with mudra practice
- Variation in EPI parameters with Meditation practice.
- Understand the impact of Body Mass Index on EPI parameters.

4.2 OBJECTIVES OF THE STUDY

- Noninvasive disease diagnostic using EPI and Neural network.
- Intervention detection/recognition.
- To unravel the mysteries of meridian theory with EPI parameters.

4.3 JUSTIFICATION OF THE STUDY

- To develop a framework to assess the impact of yoga, pranayama and meditation on human body.
- To explore the possible of detecting patterns of EPI parameters in healthy and diseased condition for disease diagnosis.
- Study of effect of intervention on various meridians

4.4 RESEARCH QUESTIONS

1. Will there be a statistically significant change in the EPI parameters for Diabetic and Non-diabetic subjects using neural network?
2. Can neural network detect the pattern of variation in EPI parameters for Anapanasati meditation as intervention?
3. Will there be a statistically significant change in EPI parameters after performing Prana Mudra? Can neural network based analysis distinguish differences?

4.5 NULL HYPOTHESIS AND ALTERNATE HYPOTHESIS

STUDY I: Classification of a Diabetic Condition

$H_{0:}$ The EPI parameters do not differ significantly and neural network will not be able to classify a diabetic condition from a non-diabetic condition.

H_a : There is a significant difference in EPI parameter patterns for diabetic condition in comparison to healthy condition and neural network will be able to classify diabetic and non-diabetic conditions

STUDY II: EPI and Prana mudra

$H_{0:}$ There is no change in the EPI patterns for Prana Mudra as intervention.

H_a : There will be a detectacble change in the EPI patterns for Prana Mudra intervention.

STUDY III: EPI and Meditation

$H_{0:}$ There is no change in the EPI patterns for Anapanasati Meditation.

H_a : There will be a significant change in the EPI patterns for Anapanasati Meditation.

CHAPTER 5

5.0 MATERIALS & METHODS

5.1 PARTICIPANTS

The EPI data collected by SVYASA University during Meditation and Mudra session were used for the intervention recognition part of analysis. There were 200 records including pre and post Anapanasati meditation taken with and without using the filter (needed to separate physiologic from psychological responses respectively). There were 108 records of the EPI data collected two times a day for 3 days from a Mudra session conducted at SVYASA.

5.1.1 SAMPLE SIZE

- Meditation : 200 records of pre-post
- Mudra: 108 records of pre-post
- Diabetes:115, Non-Diabetes-84

5.1.2 SELECTION AND SOURCE OF PARTICIPANTS

Electro Photonic Imaging data was collected from a diabetic clinic at Bangalore, India from subjects who came for their regular blood sugar measurement. There were a total of 115 subjects diagnosed to be diabetic and 84 non-diabetics. The age of the subjects was between 20- 60 years.

5.1.3 INCLUSION CRITERIA

- All men and women of age group 20 – 60 years diagnosed as diabetic

- All men and women of age group 20-60 years diagnosed as non-diabetic

5.1.4 EXCLUSION CRITERIA

- Alcoholics
- Patients suffering with severe depression
- Duplicate data and corrupted EPI data

5.1.5 ETHICAL CONSIDERATIONS

EPI data was captured from all the ten fingers in sitting position. An informed consent was taken from all the subjects along with the permission from the diabetic center to participate in the study. The data was collected in the morning time from 9 am to 11am from all the subjects .EPI based instrument was used to collect the data (Korotkov, 2014). All protocols are approved by the University Ethics Committee.

5.2 DESIGN OF THE STUDY

This is a single group pre–post study for disease diagnostics and a two group pre-post study with control on intervention recognition.

The design parameters considered for the neural networks based classification are listed below.

- Multilayer perceptron
- Number of hidden layers -1
- Number of neurons in each hidden layer: 50

- Activation functions for hidden and output layers- Hyperbolic Tangent
- Learning algorithms used in training: Back Propagation

5.3 VARIABLES STUDIED

- Variables studied for Mudra Intervention: Area, Normalized Area, Entropy and Intensity.
- Variables Studied for Meditation Intervention: All the 84 variables corresponding to the meridians of the ten fingers with and without the filter.
- Variables Studied for Diabetes: Meridians of the Right and Left Ring Finger and all the 7 chakra data.

5.4 INTERVENTIONS

5.4.1 PRANA MUDRA PRACTICE

Subjects were randomly assigned to either mudra group or the control group by asking them to pick a paper slip that has the group name.

Mudra group practised prana mudra in the same sitting posture and for the same duration. The control group also followed the same procedure, except for not practicing the prana mudra, they sat quietly, closing their eyes for 5 minutes, in a similar sitting posture as described earlier. Pre and post assessments were made on both the groups.

The subjects were explained about the nature of the study and were given basic information about the EPI technique as well as the procedure for assessment. They had to keep all the ten fingers one by one on the glass surface of the EPI equipment and data recorded.

The second part of the study was a pre-post repeated measures study with varying duration of Prana Mudra practice. The practice was for 10 minutes on the first day, 15 minutes on the second day and 20 minutes on the third day.

The EPI variables, included for analysis are as follows Intensity which represents the energy of electrons that are drawn out giving a glow above a threshold (with units in pixel), Area which measures the area of light generated by each finger of the subject in pixels and is a measure of metabolic activity. The variable entropy is the measure of chaos in regulation of biological and physiological functions.

The EPI data was captured from all the ten fingers in sitting position. An informed consent was taken from all the subjects. This study was approved by the Institutional Ethical Committee.

5.4.2 PRACTICE OF ANAPANASATI MEDITATION

Five days of intensive anapanasati meditation was given under the supervision of trained meditators. Subjects practiced meditation for 3 hours 30 minutes daily for five days; 2 hours in the morning from 5 am to 7 am and in the evening from 7 pm to 8.30 pm consistently. Demographic information was collected to know their self-reported health status, age and earlier meditation experience.

EPI Electro Photonic Imaging (EPI) known as GDV (Gas Discharge Visualization, "EPI-camera" instrument produced by "Kirlionics Technologies International," Saint-Petersburg, Russia [GDV camera Pro with analog video camera, model number: FTDI.13.6001.110310], along with IBM SPSS R statistical packages Version 20.0 was used to collect data and process for statistical analysis respectively. Temperature and humidity were also measured (using a hygrometer -

Equinox, EQ 310 CTH) to account for undue effect of atmospheric influence during pre and post data collection time. Demographic sheets were administered to all subjects to obtain self-reported health status, age, meditation practice experience and for assigning to the groups.

5.4 DATA EXTRACTION

The Finger data has coronal discharges corresponding to meridians of the ring fingers of both the hands. The meridians correspond to Hypophysis, Thyroid gland, Pancreas, Adrenal, Urino-genital system, Spleen, Nervous system and Hypothalamus, which constitute 8 dependent variables.

The chakra data corresponds to the energy centers called chakras. There are seven chakras and the EPI instruments dumps out a value in terms of pixel units supposedly related to the size of the chakra. The data set has seven dependent variables for analysis. The variable names are the names of the chakras (i.e. Muladhara, Svadhisthana, Manipura, Anahata, Vishudha, Ajna and, Sahasrara).

The data in the third category has the energy numbers corresponding to the various organs and organ systems. Energy data corresponding to the Head, Cardiovascular system, Endocrine system, Urino genital system, and the Immune system are some of the variables considered in this category.

5.5 DATA ANALYSIS

Three categories of data were analyzed using IBM SPSS Ver 20. They are Right and Left Ring Finger data, Chakra data, Organs and Organ system data.

The means and standard deviations of the 3 categories of data were analyzed using general linear model in IBM SPSS. A built-in neural network classifier from IBM SPSS was used to classify

diabetic subjects from non-diabetic subjects. Multivariate tests were done to find out the statistical significance of the difference in mean values of each of the variables. Receiver operating characteristics (ROC) was also plotted for each of the variables and for the output of the neural network.

The “save predicted values for dependent variable” feature was selected to test the accuracy of neural network predictions for multiple runs. The IBM SPSS neural network uses 70% of the samples randomly, from the given data for training. It uses the remaining 30% of the data for testing the trained network. The classification report partitions the training and hold out records and gives the details of the accuracy of training for each of the dependent variable.

EPI data collected before and after the Mudra and Meditation intervention were analyzed using paired sample t test and independent sample t test between Mudra and Control groups. The significant variables then were used in training the neural network for classifying the pre and post mudra and Meditation samples.

CHAPTER 6

6.0 RESULTS

6.1 PRE-POST CLASSIFICATION- MEDITATION

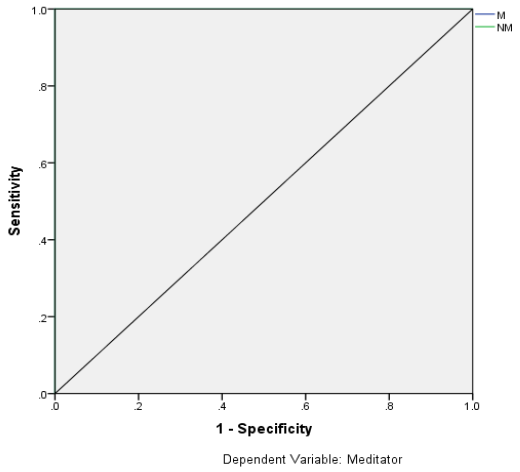
The tables below show the results of classification of meditators and non-meditators by neural networks based on the input parameters and the architecture of the neural network.

The data in **Table 6.1** corresponds to the patterns captured without the filter from all the ten fingers from the right and left hand before and after the intervention (meditation). There are two types of patterns training and hold out. The Neural network was trained with 39 meditators (M) and 38 non-meditators (NM); after the training it was given 23 patterns which had 10 M and 13 NM. Neural network was able to classify 12 of the 13 NMs and 8 of the 10 Ms correctly. The area under the ROC curve is 1 which means that the network was not over trained.

Table 6.1 Classification using 83 Parameter without filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	39	0	100.0%
	NM	0	38	100.0%
	Overall %	50.6%	49.4%	100.0%
Holdout	M	8	2	80.0%
	NM	1	12	92.3%
	Overall %	39.1%	60.9%	87.0%

Fig 6.1: Receiver Operating Characteristic for Table 6.1



Area Under the ROC curve for Table 6.1

		Area
Meditator	M	1.000
	NM	1.000

ROC=Receiver Operating Characteristic

The data in **Table 6.2** shows that the neural network was trained with 73 patterns. A total of 37 patterns consisting of 12 M and 15 NM were used to test the classification accuracy of the neural network based on its learning. Neural network was able to identify all the 12 meditators correctly, (i.e. prediction accuracy was 100%); it has wrongly classified one of the NMs as M from a total population of 15 NMs.

Table 6.2: Classification with 83 Parameters with Filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	37	0	100.0%
	NM	0	36	100.0%
	Overall Percent	50.7%	49.3%	100.0%
Holdout	M	12	0	100.0%
	NM	1	14	93.3%
	Overall Percent	48.1%	51.9%	96.3%

The data in **Table 6.3** corresponds to the results of the experiment that we did in dropping 50 % of the parameters in a given pattern assuming that meditation would have significant impact on a

majority of the meridians corresponding to both the right and left hand fingers. We have dropped all the data corresponding to the right hand fingers and have trained the neural network with the data from just the left hand fingers captured with filter.

Table 6.3: MLP with 41 parameters using left hand without filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	34	1	97.1%
	NM	0	38	100.0%
	Overall Percent	46.6%	53.4%	98.6%
Holdout	M	8	6	57.1%
	NM	8	5	38.5%
	Overall Percent	59.3%	40.7%	48.1%

The data in **Table 6.4** corresponds to the right hand fingers with filter. The classification accuracy is 100% for both meditators and non-meditators. All the 11 meditators and 14 non-meditators were classified correctly by the neural network.

Table 6.4: 41 Parameters from Right hand with Filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	38	0	100.0%
	NM	1	36	97.3%
	Overall Percent	52.0%	48.0%	98.7%
Holdout	M	11	0	100.0%
	NM	0	14	100.0%
	Overall Percent	44.0%	56.0%	100.0%

The same experiment was repeated with the data taken from right hand fingers for the 41 parameters without the filter and the result in shown in **Table 6.5.**

Table 6.5: 41 Parameters from the Right hand without filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	33	5	86.8%
	NM	3	35	92.1%
	Overall Percent	47.4%	52.6%	89.5%
Holdout	M	6	6	50.0%
	NM	5	7	58.3%
	Overall Percent	45.8%	54.2%	54.2%

The data in **Table 6.6** corresponds to data without filter for the left hand fingers. Neural network Classification accuracy for both left and right hand fingers taken without filter was low in comparison to that with the filter.

Table 6.6: Classification with MLP with left hand 41 Parameters without filter

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	39	1	97.5%
	NM	0	34	100.0%
	Overall Percent	52.7%	47.3%	98.6%
Holdout	M	5	5	50.0%
	NM	11	5	31.2%
	Overall Percent	61.5%	38.5%	38.5%

The number of parameters in each pattern is further reduced to just three parameters corresponding to the Integral Area (IA), Integral Entropy (IE) and Activation Coefficient (AC). The result of the neural network classification for various combinations of the three parameters is shown in **Table 6.7.**

Table 6.7: Neural network Trained with 3 inputs from both Right and Left hand

Neural Network Inputs	**Filter**	**Classification Accuracy**	**Area under the ROC curve**
AC,IA,IE Left side	Yes	56.2%	.839
AC,IA,IE Right side	Yes	54.1%	.740
AC,IA,IE, Left side	No	42.9%	.718
AC,IA,IE, Right side	No	66.7%	.951

The experiment was repeated with 50% incorrect data; that is 50% of the meditators were intentionally marked as non-meditators and 50% of the non-meditators were intentionally marked as meditators, accordingly the classification accuracy dropped to 50%. **Table 6.8** has the

classification accuracy for the correct data and **Table 6.9** shows the classification details of incorrect data.

Table 6.8: Classification with 83 Parameters with Correct data

	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	32	0	100.0%
	NM	0	39	100.0%
	Overall Percent	45.1%	54.9%	100.0%
Testing	M	18	0	100.0%
	NM	0	11	100.0%
	Overall Percent	62.1%	37.9%	100.0%

Table 6.9: Classification with 83 Parameters with 50% of data Interchanged

Sample	Observed	Predicted		
		M=Meditator	NM=Non-Meditator	Percent Correct
Training	M	20	10	66.7%
	NM	8	24	75.0%
	Overall Percent	45.2%	54.8%	71.0%
Testing	M	11	9	55.0%
	NM	8	10	55.6%
	Overall Percent	50.0%	50.0%	55.3%

The results in **Table 6.9** indicate the neural networks learning accuracy. When 50% of the data is incorrectly given the neural network classifier's accuracy also goes down by 50%. This is shown

in the testing records in Table 6.9 whereas the classification accuracy was 100% for the correct data as shown in **Table 6.8**.

6.1 DISEASE DIAGNOSIS - DIABETES

The EPI instrument provides a chakra view. This view provides parameters related to the psychological condition, by processing the EPI grams from the ten fingers and connecting the chakra with the part of the finger to which corresponding systems of the human body are projected. Table 6.1.1 has the energies of the seven chakra such as the mean and standard deviation for each of the chakras. It is to be noted that the mean values of the energies of the chakras for all the diabetic subjects is higher than that of the non-diabetic subjects for all the chakras showing a possible trend to classify the diabetic population from the non-diabetic. The p value truncated to 4 decimal points is shown in **Table 6.1.1**.

Table 6.1.1: Mean and Standard Deviation for the chakras for Diabetic and Non-Diabetic subjects.

D=Diabetic, ND=Non-diabetic Sample Size: D=115,ND=84		**Mean**	**Std. Deviation**	**p Value /absolute value**
Muladhara	D	5.6397	.86638	.0001
	ND	3.2769	2.76356	
Svadhisthana	D	5.1361	.80533	.0001
	ND	2.9621	2.56856	
Manipura	D	5.3900	.84413	.0001
	ND	3.1042	2.66218	
Anahata	D	5.4257	.87118	.0001
	ND	3.1337	2.72894	
Vishuddha	D	5.4495	1.08154	.0001
	ND	3.2005	2.55053	
Ajna	D	4.2300	.81385	.0001
	ND	2.5427	2.11884	
Sahasrara	D	4.6488	.77604	.0001
	ND	2.6819	2.30118	

The mean and standard deviations of each of these variables is shown in **Table 6.1.2**. The mean values of each of the variables are listed for diabetic and non-diabetic subjects as a comparative table for 115 diabetic subjects and 84 Non-diabetic subjects. It is to be noted that the mean values of all the variables for Diabetic subjects is higher than the mean value of the non-diabetic subjects as seen from the meridians in the ring finger.

Table 6.1.2: Mean and Standard deviation for the Organs Corresponding to the Meridians in the Ring Finger

Case =0 Non-Diabetic(ND) N=42 Case=1.0 Diabetic(D), N=115		**Mean**	**Std. Deviation**	**P Value-Absolute Truncated**
Hypothalamus	.00= D	4.9760	.75926	0.017
	1.00 =ND	4.6150	.86120	
Thyroid gland	.00 =D	4.8626	.99482	0.007
	1.00 =ND	4.4211	.86043	
Pancreas	.00= D	5.0240	1.02754	0.086
	1.00=ND	4.7383	.87618	
Adrenals	.00=D	5.5567	1.37960	0.276
	1.00=ND	5.3232	1.10685	
Urino-genital system	.00=D	6.2288	1.54774	0.156
	1.00=ND	5.8799	1.28642	

The results of descriptive statistics for the third category diabetic zones is shown in **Table 6.1.3**. The variables eyes, cerebral zone, cardiovascular system, coronary vessels, pancreas, liver, urino-genital system, kidneys and immune system all have their mean values for non-Diabetic subjects which were greater than that of diabetic subjects for all the subjects. This data also has a clear trend making it possible to classify diabetic from non-diabetic population.

Table 6.1.3 Mean and Standard error for the organs effected by Diabetes				
Dependent Variable D=Diabetes ND =Non-diabetes		**Mean**	**Std Error**	**P Value Truncated Absolute**
Eyes	D	4.136	.076	0.019
	ND	4.483	.125	
Cerebral zone (cortex)	D	4.301	.087	0.031
	ND	4.665	.143	
Cardiovascular system	D	4.701	.070	0.032
	ND	4.991	.115	
Coronary vessels	D	4.714	.085	0.182
	ND	4.934	.140	
Pancreas	D	4.738	.086	0.086
	ND	5.024	.142	
Liver	D	6.588	.136	0.327
	ND	6.846	.225	
Urino-genital system	D	5.880	.127	0.156
	ND	6.229	.210	
Kidneys	D	5.672	.094	0.041
	ND	6.045	.155	
Immune system	D	4.052	.073	0.212
	ND	4.228	.121	

The Receiver Operating Characteristic (ROC) of one of the variables Muladhara chakra is shown in **Fig 6.1.3.** The ROC characteristics of all the variables showed a similar trend. This suggested us to use the neural network approach to classify the diabetic and non-diabetic subjects.

FIG 6.1.3: Receiver operating characteristic for the variable Muladhara of Table 6.1.2. This indicates that its sensitivity of the dependent variable is not very reliable.

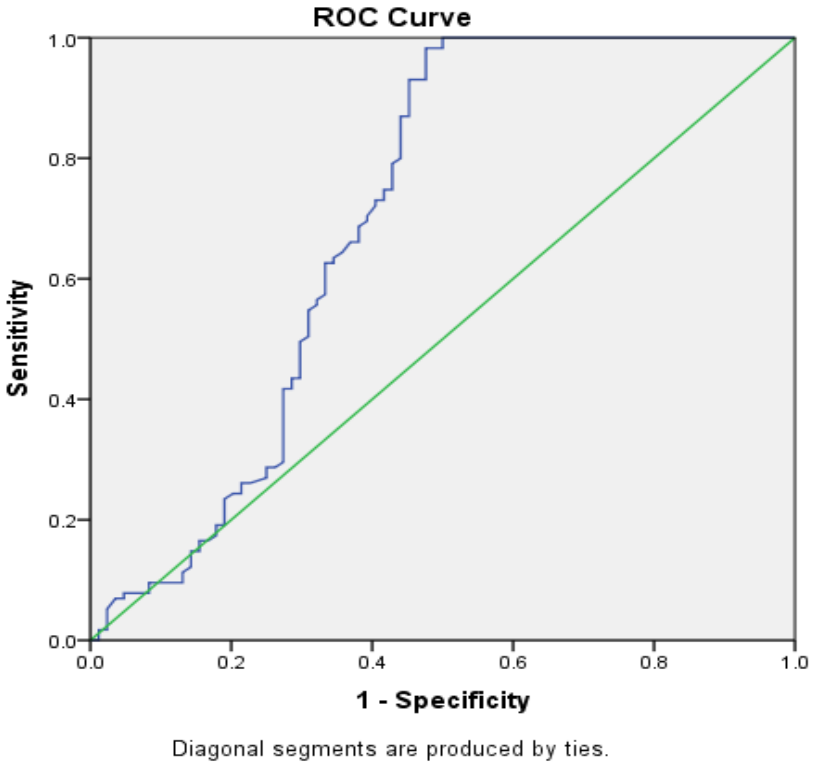
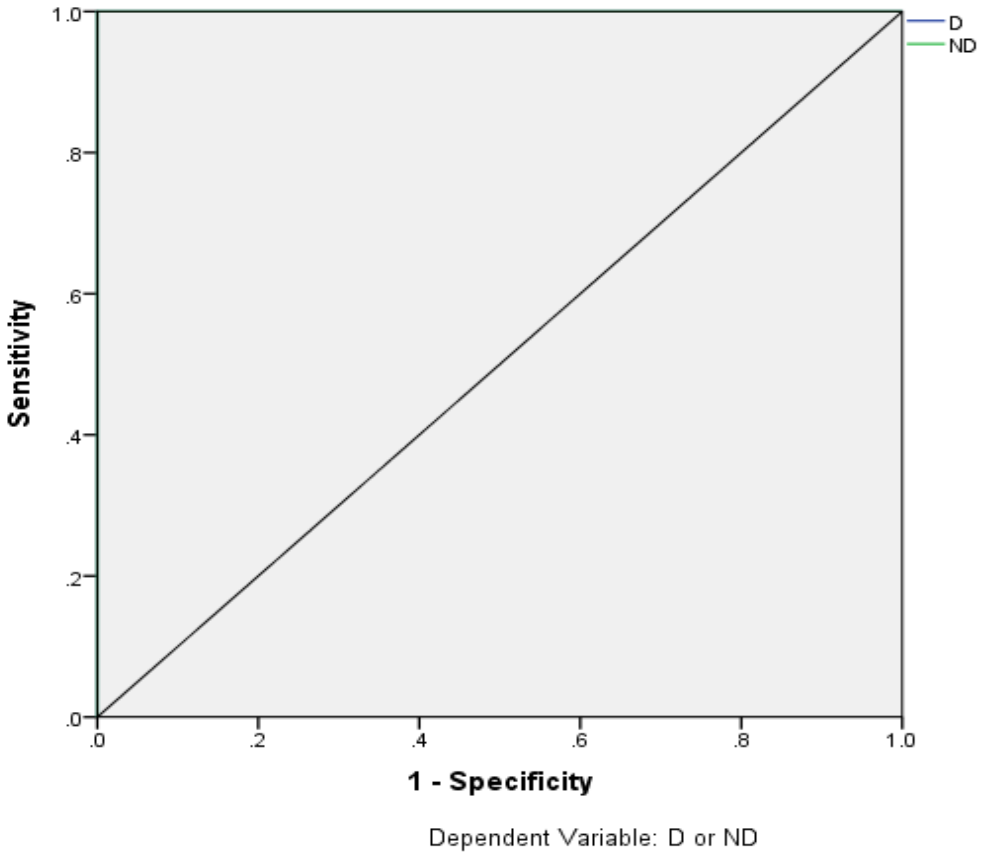


Table 6.1.4 Neural Network Classification

Sample D=Diabetic ND=Non-Diabetic		Predicted		
		D	**ND**	**Percent Correct**
Training	D	81	0	100.0%
	ND	0	38	100.0%
	Overall Percent	68.1%	31.9%	100.0%
Holdout	D	29	4	87.9%
	ND	2	16	88.9%
	Overall Percent	60.8%	39.2%	88.2%

The data in **Table 6.1.4** is the result of neural network classification. **Fig 6.1.4** shows the ROC of the output of the neural network. This characteristic is indicative of the accuracy of the training and classification of the neural network.

Fig 6.1.4 ROC for Table 6.1.3- ND is along the Sensitivity axis
D is on the top along the Specificity axis



6.2 RECOGNITION OF A YOGIC PRACTICE - PRANA MUDRA

Table 6.2.1 has the baseline (pre-intervention) values as well as the post intervention values for the EPI parameters for both the control and Mudra groups. The baseline mean values for all the EPI parameters in the control group were significantly larger than the corresponding EPI parameter values for the Mudra group.

Table 6.2.1: Shows the values of mean and standard deviation of the four variables Area, Normalized Area, Average Intensity and Entropy for mudra and control groups

	Mudra (n=29)	Control (n=32)	p value*	Effect Size (ES)
Area Pre	9847.93 ± 18705	10194 ± 1341	0.406	0.212
Area Post	10621 ± 1663	10518 ± 876	0.759	0 .077
Normalized Area Pre	1.87±.71	2.64±1.2	0.003	0.78
Normalized Area Post	1.97±0.7	2.79±1.1	0.001	0.889
Average Intensity Pre	73.5±4.9	78.6±5.6	0.001	0.971
Average Intensity Post	75.06±5.3	80.52±5.7	0.001	0.988
Entropy Pre	1.95±0.11	1.98±.06	0.234	0.338
Entropy Post	1.95±0.11	1.98±0.05	0.222	0.351

*Table Details: Data are represented as mean ± s.d, n: number of participants, ES: Effect size computed; Pre corresponds to the data before intervention and Post corresponds to data after intervention. *p value comparing mean values of mudra and control for pre and post; significance at 0.05 using the independent sample t test.*

The difference between Pre and Post intervention (practice of mudra) values for each of the variables were computed and an Independent sample t test was carried out on the difference variables for the Mudra and Control groups. The independent sample t test did not show a statistical significance between the means of difference variables between mudra and control groups. The classification accuracy varied between 80% to 100% for post intervention samples and the

accuracy varied from 50% to 80% for the pre-intervention samples. Table 6.2.2 shows the best case values for both the samples.

Table 6.2.2 Classification Accuracy of Post Intervention groups with one Hidden Layer and 4 processing Elements Using Multi-Layer Perceptron. The Area Under the Curve for Receiver Operating Characteristic (ROC) =0.97

Sample		Predicted		
		Mudra	Control	Percent Correct
Training	Mudra	14	1	93.3%
	Control	0	14	100.0%
	Overall Percent	48.3%	51.7%	96.6%
Holdout	Mudra	7	0	100.0%
	Control	1	9	90.0%
	Overall Percent	47.1%	52.9%	94.1%

The difference in pre-post intervention values of the first day were compared with the difference in pre- post intervention values of the third day of Mudra practice using independent sample t test and the result is shown in Table 6.2.3 (Average Intensity, Entropy). The mean value of the EPI parameters Average Intensity and Entropy showed significant changes ($p<.05$), indicating the possible effect of mudra intervention. The effect size was high for the variable Average Intensity.

Table 6.2.3: Comparison of Pre-Post Difference in Mean and Standard deviations of the variables, Area, Normalized Area, Average Intensity and Entropy on Day1 and Day3. Independent sample t test p<.05 for Average Intensity and Entropy.

	Day1_Pre_Post Diff	Day3_Pre_Post_Diff	p value*	Effect Size (ES)
Area	517.7±851	115±1027	0.052	0.426
Normalized Area	0.115±0.75	0.323±0.68	0.075	0.29
Average Intensity	-3.6±5.4	0.73±4.6	0.013	0.86
Entropy	.045±.07	-.0076±.05	0.022	0.509

CHAPTER 7

7.0 DISCUSSION

This chapter presents a discussion of results obtained under the three experimental conditions as described earlier.

7.1 DISEASE DIAGNOSIS

The electron capture from each of the fingers has a definite relationship with health of the organ/organ system. The analysis shows significant changes related to the variables in the endocrine system which has a logical correspondence to diabetes. It also shows correlation with the ring finger of the right and left hand as pointed out in the previous work (Shanmuga Priya & Rajesh, 2013). Sectors 3 of the right hand ring finger and sector 6 of the left hand ring finger correspond to pancreas and reflect details related to the health of pancreas in diabetes.

The results also indicated that the size of the chakras does not give any meaningful insight into the malfunctioning of any single chakra or a group of chakras; it has significant effect on all the chakras. The approach of classifying the data into three different categories makes the study more robust from the point of view of classifying the diabetic and non-diabetic population.

Earlier studies on detection of diabetes focused on the statistical analysis of the EPI variables just to establish that the EPI data has information in it for the detection of a diabetic state from a research perspective. The earlier works do not discuss the methodologies required for the diagnosis of diabetes on an individual basis. This work is a pattern based approach which will enable detection of a pattern of variables which a classification tool will be able to identify and segregate

different energy states based on life styles and diseased conditions on an individual basis as the neural network gets trained.

Statistical analysis is for establishing the significance at a gross level, having done that, it is important to detect the changes in the EPI parameter patterns at an individual level. Identification of a key pattern enables the machine learning tools like neural networks to detect and classify the same.

The key contribution of this work is to bring out the classification accuracy from the three categories of data chakra data, finger data and data from organs and organ systems.

The EPI data has a large number of parameters. They are multidimensional and non-linear, which calls for a pattern based approach. Artificial neural networks have been used in the literature for bio-medical applications. An artificial neural network (ANN) consists of a series of interconnecting parallel nonlinear elements with limited number of inputs and outputs (Wd Hong et al., 2013).

Artificial Neural Network analysis is more successful than the conventional statistical techniques in predicting clinical outcomes when the relationship between variables that determine the prognosis is complex, multidimensional and non-linear (Wan-dong Hong, Ji, Wang, Chen, & Zhu, 2011).

7.2 INTERVENTION RECOGNITION

This study using neural network shows that the intervention of 5 days was effective enough to cause a definite change in the EPI parameters. The study on effect of anapanasati meditation showed statistically significant changes in the EPI parameters (Guru Deo et al., 2015).

The classification accuracy of the neural network was more for the data captured with filter. This shows that the neural network was able to detect the physiological changes due to the meditation

practice. This also would mean that meditation could have resulted in significant changes at the physiological level. As pointed out in the literature survey disease has its origin from the mind, any practice that is done to reduce the mind activity is likely to have a corresponding effect at the physiological level. The fact that right hand fingers and data with filter resulted in accurate classification is an indication of significant physiological changes. EPI Image with filter carries information about autonomic control at the level of stable physiological processes. In other words, EPI images with filter reflect the level of physiological energy that ensures the functioning of the body at a base and organic energy level. This level is very stable, it ensures long term body functioning and remains present throughout psycho-physiological homeostasis.

The data taken from the right hand, when analyzing processes is linked to psychological particularities and conscious activity. It carries information about the left half of the cortex of the cerebral hemispheres and has information regarding the person's physiological condition. The meditation effects are subtle and any online monitoring would distract the process of meditation and could alter the overall outcome especially for a meditation like anapansati which involves continuous monitoring of breath. An offline technique like EPI could be appropriate in capturing the after effects of meditation.

Future studies could be sector based analysis of EPI data for disease diagnosis or to understand the impact of the intervention on any particular meridian for EPI based disease diagnosis.

This study provides a framework for intervention recognition with EPI instrument and neural network. This framework could be used for therapeutic purposes to understand the impact of intervention on a disease.

The advantage of neural network based classification of pre and post intervention population is to capture the unique pattern of EPI variables that make this intervention detectable. In this study

several variables related to the Gastro Intestinal tract have shown significant changes after the meditation which was not captured in any other study on meditation.

There are several studies on EPI parameters but all of them have tried to establish statistically significant changes in some of the EPI parameters in various situations. There are situations were none of the parameters are statistically significant but a unique pattern of variation is able to better describe the event. This happens when the variable is an integer having both positive and negative values and when the changes are very minimal.

Mudras are used for energy manipulation in one's own body. The energy manipulation will have both immediate and long term effects. In this study we have focused on the immediate effect just after the intervention and also on the third day of the intervention.

The first part of the experiment was to study the difference between sitting quietly with eyes closed with attention on breath (control group) with that of sitting quietly applying Prana mudra (Mudra group) and taking attention on the breath. This practice for 5 minutes had a consistent change in effect size for the three variables Normalized Area, Average Intensity and Entropy. Change in this variables is an indication of possible energy manipulation. Normalized area is a measure of general health index in healthy people. It indicates the presence of structural and functional state in normal mind body activities. It indicates the level of adaptation of organism to inner (psycho-physiological) and external (stress, food, ecology) influences character of metabolism, It also depends on quantity of electrons in avalanches, ionizing air gap, more the electrons, the higher level of metabolic rate, since the area of glow is in proportion to quantity of electrons.

The difference between Mudra and Control was very subtle from the activity perspective. Both the groups were sitting idle, the only difference was in adopting the mudra. Just sitting idle with or without the mudra also caused a significant change in one of the EPI parameters. This change can

be verified with a longer duration of sitting idle to detect an idle condition from other intervention. In an earlier study on sitting in lotus posture for 30 min showed increases in subtle energy levels in all acupuncture meridians; those sitting in chair produced universal decreases. Results for 10 and 20 min showed how these changes in energy values took time to build up with increasing time. (Ghosh, Hankey Alex, T.M Srinivasan, 2016). This is in line with our observation that prana mudra needs to be applied for more than 20 minutes for its effect to be recorded by the EPI device.

The increased effect size for Mudra is an indication of a possible chance of recognizing this intervention from the control when the experiment is repeated for a longer duration. The Neural network based classification was able to classify the Mudra and Control groups after the intervention more accurately than before the intervention.

The baseline values of the EPI parameters of both the groups were not equal though the control and mudra grouped matched well with respect to age and health status. This discrepancy was taken care of by computing the difference in EPI parameters between the pre and post intervention values for the control and Mudra groups and then carrying out the independent sample t test. The statistically significant difference in the means of the variable Average Intensity demonstrates the effect of mudra on the level of subtle energy activity or the inner energy. The mudra helps to increase the prana shakti or the "Life force". It increases one's self confidence. It helps the body in increasing its vitality and sustenance when deprived of food and water. It helps in improving weak eyesight and quiescence (motionlessness) of the eyes. It supports any other treatment where the patient is short on confidence. The variable average intensity is a measure of amount of activity which is directly related to the amount of energy flow. The increase in this variable after the intervention is indicative of the flow of prana due to the application of prana mudra.

Conserving and enhancing subtle energy of prana or Qi (as in acupuncture theory) is important in all yoga practices; thus, these experiments provide an experimental evidence for enhancing subtle energy through such practices.

The second part of the experiment which involved repeating the Mudra intervention with varying duration for 3 days showed a statistically significant difference in the EPI parameters Average Intensity and Entropy ($p<.05$) on the third day compared to the first day. The difference in pre-post values of the first day were compared with the third day. This is an indication that mudra must be practiced for a duration of more than 20 minutes in one sitting to see an appreciable change.

It is said that Prana Mudra is used for curing eye related problems. In future studies the EPI parameters can be extracted for the related organs like the eye to see the corresponding changes.

CHAPTER 8

8.0 APPRAISAL

8.1 SUMMARY OF FINDINGS

The diabetic condition has a definite impact on the EPI parameters. The impacted parameters have a logical link with corresponding organs and organ systems. Finally this experiment adds value in terms of its ability to relate bio-fields with the disease conditions. It provides a frame work for disease diagnosis using the EPI technique. This study has shown that refining the differences in intervention detection through the use of neural network is important to bring out differences that may not be obvious at a first glance.

A clear difference in the means and standard deviations of the variables not only makes the two populations separable but also correlates with the likelihood of these values being different as per tendencies in diabetic metabolism. As an example pancreas, cardiovascular tissues and hypothalamus should have different values for diabetic and non-diabetic. This has been established by this study (K Shiva Kumar, T.M Srinivasan, H.R Nagendra, & Marimuthu, 2016).

The other findings with respect to recognition of a yogic practice like meditation using neural network classification of pre and post data was consistent and accurate when trained with 83 parameters than with lower number of parameters. It is also observed that the training of the neural network with the right hand parameters showed good classification accuracy. The data captured with filter had more information related to meditation as it captures the psychological state.

EPI Image with filter carries information about autonomic control at the level of stable physiological processes. In other words, EPI images with filter reflect the level of physiological

energy that ensures the functioning of the body at a base and organic energy level. This level is very stable, it ensures long term body functioning and remains present throughout psycho-physiological. The right hand, when analyzing processes is linked to psychological particularities and conscious activity, carries information about the left half of the cortex of the cerebral hemispheres and says more about the person's physiological condition (Korotkov, 2014).

This study shows that the practice of anapanasati meditation for 5 days was effective enough to cause a definite change in the EPI parameters. Similarly the EPI device was also capable of capturing subtle changes in EPI parameters with mudra practice for a duration of 30 minutes.

8.2 CONCLUSIONS

The EPI in combination with neural network was consistent and successful in classifying pre-post population using a 5 day meditation called Anapanasati as intervention.

Adopting a mudra and sitting quietly with eyes closed for 5 minutes did not have a big difference in the EPI parameters. However Mudra practiced for a longer time showed significant change in the mean value of the EPI parameter average intensity. Mudra must be practiced for more than 20 minutes in one sitting for observing a detectable change in the EPI parameters.

The neural network is able to capture a pattern of EPI parameters corresponding to a diabetic condition which was distinct and different from a non-diabetic condition.

8.3 IMPLICATIONS OF THE STUDY

Machine learning techniques like neural network in combination with EPI could be a good diagnostic tool. This framework could be used for therapeutic purposes to understand the impact of intervention on a disease. This study implies that a record of changes in EPI parameters for each

of the yogic practices can be maintained and mapped to the corresponding changes in EPI parameters in disease conditions in comparison to healthy EPI measurements. Training the neural network with the statistically significant parameters will enable simultaneous diagnosis of multiple disorders with a single capture of EPI data.

8.4 APPLICATIONS OF THE STUDY

This study uses Artificial Neural Network analysis which is more successful than the conventional statistical techniques in predicting clinical outcomes when the relationship between variables that determine the prognosis is complex, multidimensional and non-linear. The relation between EPI parameters and clinical outcomes are usually non-linear and multidimensional and hence this technique is useful for any measurements with EPI.

8.5 STRENGTH OF THE STUDY

This is the first study of its kind using EPI and neural network both for disease diagnosis and intervention recognition. Based on this study it is proposed to automate the outcome of EPI with a machine learning software to make the interpretation of the parameter variation more qualitative and informative.

8.6 LIMITATIONS OF THE STUDY

The training of the neural network could be a challenge if a subject has multiple comorbidities along with each of the disorders. The data used in this study was not verified to check if the subjects have symptoms related to other disorders in addition to diabetes.

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APPENDICES

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PUBLICATIONS FROM THIS WORK

1. K Shiva Kumar, TM, S., HR, N., & P Marimuthu. (2016). Electro photonic Imaging Based Analysis of Diabetes. International Journal of Complementary & Alternative Medicine, 4(5).
2. Shiva Kumar, K., Srinivasan, T., Guru, D., Giri Kumar, V., & Nagendra, H. (2016). International Journal of Current Medical and Pharmaceutical Electro-Photonic Imaging For Detecting An Intervention (Meditation).
3. Shiva Kumar, K., Srinivasan, T., Nagendra, H., Ilavarasu, J., Mondal, B., & Deo, G. (n.d.). Classification of Electro Photonic Images of Yogic Practice of Mudra through Neural Networks. *International Journal of Yoga*. (Accepted for Publication)

APPENDIX II

INFORMED CONSENT FORM

Informed Consent for the Study

You are being invited to participate in the research related event which is likely to be beneficial to the society.

Title of the study: Neural Network Based Analysis of Electro Photonic Data for Disease Diagnosis and Intervention Recognition.

Purpose of the Study: To establish EPI parameters for people who are diabetic and those who practice Anapanasati meditation and Mudra Pranayam.in comparison to normal, age matched population".

Investigator: K.SHIVA KUMAR

Contact No. +919945578216

Guide: Dr. T. M. Srinivasan

Co-guide: Dr. H.R. Nagendra

Safety Issues

About the instrument: The instrument EPI is non-invasive and hence there won't be any harm to you. Your participation is absolutely voluntary, and you are free to withdraw yourself from the study at any time without any reason, there will not be any charge for your participation, and confidentiality of your details will be maintained.

The procedure of the experiment was explained to me and I have given my consent for being a subject for the study.

Date……. Signature of the participant

Informed Consent Form for Men and Women who would be giving the EPI data

Principal Investigator: K. SHIVA KUMAR

Name of Organization: S-VYASA Yoga University

Name of Proposal: Measuring the Effect of DIABETES Anapanasati Meditation, and Mudra Pranayama through Electro photonic Imaging

This Informed Consent Form has two parts:

- **Information Sheet (to share information about the research with you)**
- **Certificate of Consent (for signatures if you agree to take part)**

PART I: Information Sheet

Introduction

I am K. Shiva Kumar, PhD Scholar, in S-VYASA Yoga University, Bangalore. I am doing this study on Analysis of Electro photonic Imaging data for diabetes and yogic practices like mudra and meditation. We invite you to participate in the research related to analysis of EPI data for practice of Anapanasati Meditation, Mudra pranayama and Diabetic condition. You can talk to anyone you feel comfortable before joining about the research.

Purpose

To establish EPI parameters for people who are diabetic or who practice Anapanasati meditation or Mudra Pranayama in comparison to normal, age matched population**.**

Type of Research Intervention

Anapanasati meditation is an initial part of the vipassana meditation. It is a meditation in which one obtains mastery over one's unruly mind through objective observation of natural and normal breath. In Pali literature it is known as 'Anapanasati', which means awareness of one's own respiration.

Mudra Pranayama involves sitting in a comfortable position and breathing normally. Prana mudra is adopted by joining the thumb with the ring and little fingers, keeping the index and middle fingers straight. This practice is done for a maximum duration of 20 minutes. It enhances the overall energy in the body.

Participant selection

We invite all adults who are participating in two weeks camp of Anapanasati meditation. We also invite

Students of SVYASA for 3 days for a duration of 20 minutes per day in the evening after their regular College hours

Voluntary Participation

Your participation is absolutely voluntary, and you are free to withdraw yourself from the study at any time without any reason; there will be no charge for your participation and confidentiality of your details will be maintained.

Procedures and Protocol

The following procedure and protocol will be followed:

- Measurement will be done before breakfast or after 3 hours of food or one hour of any liquid drink.
- Measurement will be taken after 15 minutes of washing hands
- You will be instructed before EPI readings about finger placement on the glass
- You will be asked to remove all metallic things which you don't carry or wear 24 hours on you
- Measurement will be taken twice, first without filter then with filter
- Glass will be cleaned by special solution after each subject's readings

Duration

You have to devote 5 to 6 minutes of your time for this measurement.

Side Effects:

The instrument EPI is non-invasive and hence there won't be any harm or risk to you.

Benefits

After two weeks, soft copy of report will be sent to you by email prepared by inbuilt software of EPI. Another option is your Chakra and energy field Images will be shown to you on site. You have to choose either. There will be no charge for this report.

Incentives

Your participation is absolutely voluntary and there is no incentive for this.

Confidentiality

Your EPI information will not be shared with any one.

Right to Refuse or Withdraw

This is a reconfirmation that participation is voluntary and includes your right to withdraw any time.

Whom to Contact?

For any query, kindly contact the following concerned person.

Name: K.SHIVA KUMAR

Contact No. +919945578216

PART II: Certificate of Consent

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research and understand that I have the right to withdraw from the research at any time.

Name of Participant: …….

Signature of Participant ……..

Date …….

I have accurately read or witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely**.**

Name of Researcher: K.SHIVA KUMAR

Signature of Researcher ……..

Date …….

APPENDIX III

INSTITUTIONAL ETHICS COMMITTEE APPROVAL

APPENDIX IV

1.0 ANAPANASATI MEDITATION DATA

In the tables below each of the variables have pre and a post suffix. The variables with Pre as suffix correspond to their values before the meditation. The post values are after the meditation. The last column is the grouping variable filter. A value of Y indicates that the data is taken with filter and an N indicates data captured without the filter (i.e. without the thin plastic foil between the glass and the finger). We have 5 tables corresponding to the five fingers of the right hand.

1.1 EPI DATA FOR THE THUMB FINGER BEFORE AND AFTER THE MEDITATION

Name	Right eye_pre	Right ear, Nose, Maxillary sinus_pre	Jaw, Teeth right side	Throat, Larynx, Trachea, Thyroid gland_pre	Jaw, Teeth left side_pre	Left ear, Nose, Maxillary sinus_pre	Left eye_pre	Cerebral zone (cortex)_pre	Right eye_post	Right ear, Nose, Maxillary sinus_post	Jaw, Teeth right side	Throat, Larynx, Trachea, Thyroid gland_post	Jaw, Teeth left side_post	Left ear, Nose, Maxillary sinus_post	Left eye_post	Cerebral zone (cortex)_post	Filter
C1	0.3	0.09	0.08	0.76	0.78	0.37	0.67	0.45	0.38	0.1	-0.46	0.84	0.75	0.52	0.46	0.36	N
C2	0.43	0.64	0.64	0.99	0.82	0.9	0.9	0.45	0.26	0.25	0.17	1.19	0.69	0.66	0.59	0.21	Y

C3	0.81	0.57	0.48	0.63	0.96	0.47	0.34	0.59	0.33	0.02	0.16	0.57	0.68	0.43	0.33	0.43	N
C4	0.31	0.06	0.28	1	1.26	1.25	1.13	0.37	0.76	0.48	0.7	1.08	1.24	0.55	0.47	0.34	Y
C5	0.05	0.16	0.02	0.78	0.38	0.11	0.28	0.15	0.46	0.01	-0.12	0.53	0.42	0.23	0.45	0.34	N
C6	0.42	0.26	0.38	0.86	0.46	0.45	0.44	0.26	0.8	0.53	0.49	1.06	1.35	1.09	0.97	0.65	Y
C7	0.51	0.25	0.17	0.43	0.74	0.12	0.23	0.46	0.36	0.18	0.09	0.47	0.4	0.42	0.47	0.28	N
C8	0.82	0.52	0.5	0.83	1.33	1.11	0.58	0.59	0.66	0.39	0.39	0.66	0.41	0.44	0.58	0.44	Y
C9	0.2	0.01	0.02	0.65	0.26	0.31	0.46	0.32	0.36	0.22	0.1	0.54	0.44	0.36	0.4	0.31	N
C10	0.56	0.43	0.27	1.04	1.12	0.77	0.74	0.46	0.43	0.33	0.2	0.89	0.93	0.57	0.69	0.45	Y
C11	0.02	0.03	-0.03	0.53	0.52	0.12	0.2	0.06	0.22	0.23	-0.05	0.89	0.45	0.71	0.57	0.23	N
C12	0.3	0.26	0.17	1.1	0.63	0.58	0.48	0.3	0.53	0.42	0.4	0.43	0.51	0.88	0.32	0.4	Y
C13	0.19	0.13	0.13	1.41	0.33	0.43	0.44	0.26	0.16	-0.07	-0.1	1.29	0.49	0.59	0.3	0.33	N
C14	0.58	0.46	0.48	1.65	0.6	0.62	0.74	0.5	0.1	0.12	0.21	1.04	0.44	0.43	0.53	0.22	Y
C15	0.01	0.26	0.39	0.73	0.49	0.35	0.26	0.12	0.01	0.26	0.39	0.73	0.49	0.35	0.26	0.12	N
C16	0.33	0.43	0.52	0.92	0.85	0.58	0.71	0.41	0.33	0.43	0.52	0.92	0.85	0.58	0.71	0.41	Y
C17	0.44	0.02	-1.	0.56	0.79	0.32	0.63	0.44	0.28	0.29	0.17	0.19	-0.13	0.37	0.36	0.12	N

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C18	0.52	0.25	0.39	1.85	0.61	0.39	0.46	0.46	0.46	0.33	0.33	0.55	0.11	0.36	0.4	0.34	Y
C19	0.21	-0.25	0.09	0.89	0.74	0.39	0.49	0.32	-0.49	-0.46	0.07	0.83	0.2	0.35	0.12	0.05	N
C20	0.58	0.43	0.57	1.02	0.96	0.63	0.63	0.46	0.16	0.2	0.56	1.18	0.34	0.33	0.47	0.3	Y
C21	-0.02	-0.86	-1.14	-0.24	0.51	0.25	0.54	0.14	-1.02	-0.25	-0.13	1.24	0.66	0.52	0.58	-0.01	N
C22	0.06	0.11	0.15	1.75	0.59	0.36	0.26	0.24	0.07	0.09	0.25	1.71	0.98	0.7	0.48	0.19	Y
C23	-0.63	-0.06	-0.76	0.16	0.24	0.3	0.34	-0.84	0.53	0.32	0.6	0.82	0.15	0.43	0.33	0.52	N
C24	0.47	0.3	0.53	1.02	1.18	0.77	0.62	0.37	0.42	0.45	1	1.14	0.41	0.72	0.72	0.3	Y
C25	-1.02	-0.25	-0.13	1.24	0.66	0.52	0.58	-0.01	0.15	-0.05	0.38	-0.3	0.15	0.15	0.27	-0.09	N
C26	0.07	0.09	0.25	1.71	0.98	0.7	0.48	0.19	0.35	0.21	0.3	0.86	0.68	0.63	0.44	0.47	Y
C27	0.56	0.29	0.41	0.19	0.29	-1.94	0.07	0.38	0.32	0.23	0.27	1.25	0.45	0.24	0.26	0.29	N
C28	0.85	0.54	0.55	0.81	1.3	0.77	0.82	0.63	0.35	0.28	-0.23	0.76	0.66	0.67	0.6	0.31	Y
C29	0.46	0.27	0.38	0.43	0.64	0.46	0.78	0.06	0.35	0.1	-0.02	0.61	0.56	0.69	0.49	0.3	N
C30	0.66	0.65	0.37	1.23	1.22	0.65	0.8	0.46	0.7	0.58	0.28	1	0.58	0.77	0.62	0.52	Y

C31	-0.63	-1.64	-2.29	-1.67	0.28	0.21	0.51	-0.2	0.46	0.25	0.21	0.48	0.77	0.48	0.41	0.37	N
C32	0.67	0.47	0.25	1.11	0.88	0.66	0.47	0.4	0.82	0.66	0.87	0.97	0.98	0.75	0.92	0.75	Y
C33	0.45	0.23	0.29	0.53	0.55	0.56	0.5	0.21	0.31	0.29	0.05	0.29	-0.67	0.44	0.52	0.36	N
C34	0.64	0.61	0.36	0.85	0.9	0.74	0.77	0.44	0.36	0.38	0.37	1.1	0.47	0.46	0.56	0.16	Y
C35	0.19	0.19	0.2	0.74	0.22	-0.04	0.32	0.13	0.41	0.31	0.35	0.13	0.25	0.65	0.53	0.22	N
C36	0.38	0.43	0.32	0.84	0.61	0.39	0.33	0.45	0.57	0.07	0.22	1.14	0.74	0.9	0.79	0.29	Y
C37	0.43	0.52	0.46	0.44	0.25	0.33	0.58	0.64	-0.2	-0.5	-0.8	-0.22	0.12	0.15	0.37	0.11	N
C38	0.42	0.54	0.9	0.86	0.61	0.67	0.88	0.78	0.16	0.18	0.38	0.76	0.33	0.16	0.33	0.19	Y
C39	0.45	0.36	0.21	0.65	0.38	0.41	0.53	0.31	0.66	0.21	-0.71	0.46	0.24	0.37	0.03	0.26	N
C40	0.39	0.26	0.35	0.97	0.89	0.68	0.72	0.53	0.35	0.17	0.45	1.06	1.17	0.81	0.7	0.41	Y
C41	-0.96	0.04	0.28	0.48	0.5	0.24	0.53	0.11	0.43	0.52	0.46	0.44	0.25	0.33	0.58	0.64	N
C42	0.71	0.59	0.34	0.67	0.5	0.38	0.15	0.42	0.42	0.54	0.9	0.86	0.61	0.67	0.88	0.78	Y
C43	0.28	0.17	0.04	0.81	0.22	0.12	0.49	0.27	-0.28	-0.35	0.13	0.08	-0.8	-0.04	0.11	0.08	N
C44	0.68	0.4	0.38	0.83	0.69	0.62	0.74	0.5	0.37	0.25	0.28	0.67	0.36	0.04	0.11	0.19	Y
C45	0.03	0.04	-0.	-0.78	0.1	0.61	0.49	0.4	-0.28	-0.02	0.2	0.61	0.45	0.4	0.32	0.05	N

			77														
C46	0.2	0.19	0.2	0.61	0.17	0.32	0.45	0.36	0.24	0.14	0.22	0.73	0.75	0.29	0.41	0.31	Y
C47	0.07	0.21	0.46	1.38	0.39	0.25	0.21	0.37	0.01	0.05	0.28	0.6	0.32	0.09	0.27	0.45	N
C48	0.44	0.45	0.48	1.3	0.58	0.34	0.3	0.49	0.17	0.31	1.02	1.03	0.55	0.59	0.53	0.51	Y
C49	0.09	-0.03	0.01	0.86	0.54	0.47	0.22	0.13	0.7	0.37	0.27	0.42	0.24	0.36	0.52	0.52	N
C50	0.67	0.56	0.49	0.93	0.51	0.53	0.75	0.46	0.56	0.47	0.2	0.95	1.1	0.7	0.73	0.6	Y
C51	0.8	0.21	0.14	0.32	0.56	0.53	0.72	0.23	0.67	0.16	0.11	0.03	0.46	0.78	0.57	0.39	N
C52	1.27	0.95	1.18	0.97	0.7	0.78	0.88	0.78	0.6	0.73	0.83	1.01	0.54	0.82	0.58	0.12	Y
C53	0.17	0.2	0.07	0.6	0.38	0.15	0.13	0.08	0.87	0.54	0.62	0.43	0.38	0.58	0.52	0.38	N
C54	0.54	0.53	0.23	1.03	0.92	0.77	0.46	0.36	1.13	0.6	0.42	1.1	1.1	0.98	0.88	0.67	Y
C55	0.81	0.43	0.52	-0.06	0.48	1	0.85	0.35	0.36	0.06	0.08	1.3	0.53	0.45	0.34	0.37	N
C56	1.02	0.73	0.83	0.87	0.99	0.82	0.92	0.74	0.61	0.5	0.33	1.04	0.4	0.14	0.35	0.25	Y
C57	0.18	0.17	-0.19	0.46	0.21	0.12	0.17	0.19	0.23	0.01	0.13	0.64	0.84	0.49	0.52	0.27	N
C58	0.2	0.31	-0.04	0.76	0.43	0.32	0.21	0.29	0.76	0.54	0.54	0.9	0.64	0.43	0.43	0.36	Y
C59	0.38	0.2	0.09	0.64	0.25	0	-0.67	0.33	0.2	-0.16	0.21	0.33	0.5	0.09	0.35	0.15	N

C60	0.44	0.31	0.28	1	1.04	0.57	0.79	0.24	0.18	0.22	0.06	0.89	0.04	-0.07	0.48	0.26	Y
C61	0.13	0.08	0.12	0.97	0.77	0.23	0.34	0.24	0.57	0.27	0.23	0.47	0.55	0.26	0.39	0.39	N
C62	0.56	0.35	0.25	1.01	1.37	0.87	0.9	0.55	0.74	0.57	0.41	0.81	1.36	0.8	0.55	0.33	Y
C63	0.38	0.23	0.45	0.07	-0.69	0.31	0.13	0.35	0.6	0.31	0.6	0.51	-0.06	0.04	0.16	0.03	N
C64	0.62	0.97	1.62	1.19	0.29	0.53	0.8	0.57	0.6	0.75	0.88	1.01	0.51	0.32	0.51	0.23	Y
C65	0.45	0.25	0.15	0.88	0.46	0.39	0.54	0.52	0.2	0.1	0	0.8	-0.07	0.03	0.1	0.15	N
C66	0.49	0.29	0.51	1.35	0.52	0.32	0.47	0.38	0.39	0.35	0.47	1.33	0.46	0.35	0.46	0.46	Y
C67	0.41	0.35	-0.12	0.44	0.37	0.64	0.39	0.39	0.11	0.12	-0.75	0.26	0.6	0.72	0.35	0.32	N
C68	0.59	0.32	0.45	0.83	0.95	0.61	0.54	0.51	0.52	0.36	0.31	0.84	0.45	0.34	0.38	0.45	Y
C69	0.32	0.25	0.33	0.25	0.18	0.21	0.55	0.37	0.23	0.18	0.83	0.52	-0.78	-0.39	0.31	0	N
C70	0.29	0.43	0.4	0.81	0.65	0.47	0.52	0.47	0.55	0.44	0.57	0.74	0.46	0.42	0.59	0.46	Y
C71	0.63	0.42	0.33	0.11	-0.42	0.02	0.47	0.27	0.36	0.29	0.11	0.55	-0.78	0.21	0.23	-0.11	N
C72	0.74	0.56	0.67	0.99	0.49	0.47	0.61	0.49	0.83	0.53	0.57	0.86	0.62	0.46	0.6	0.48	Y
C73	0.03	0	0.12	0.46	0.23	0.32	-0.09	0.08	0.2	0.08	0.2	0.6	-0.58	0.31	0.78	0.37	N
C74	0.07	0.16	0.18	0.73	0.56	0.57	0.41	0.14	0.6	0.44	0.24	1.05	0.5	0.75	0.79	0.65	Y

C75	0.72	0.32	-0.11	0.25	0.25	0.22	0.47	0.43	0	-0.36	-0.46	0.2	0.48	-0.02	0.09	0.01	N
C76	0.64	0.27	0.25	0.78	1.06	0.5	0.76	0.47	0.44	0.32	0.27	0.9	0.48	0.71	0.53	0.36	Y
C77	0.51	0.36	-0.2	0.76	0.7	0.53	0.5	0.16	0.46	-0.4	-1.69	0.15	0.84	0.6	0.58	0.3	N
C78	0.75	0.49	0.35	1.11	0.85	0.72	0.73	0.49	0.48	0.3	0.15	0.79	0.84	0.56	0.43	0.29	Y
C79	0.05	-0.02	-0.77	0.44	0.47	0.18	0.23	0.2	0.03	0.17	0.24	0.24	0.26	0.4	0.56	0.09	N
C80	0.21	0.15	0.16	0.78	0.75	0.45	0.37	0.32	0.36	0.42	0.51	1.05	0.76	0.48	0.62	0.47	Y
C81	-0.3	0.05	0.05	0.65	0.23	0.19	0.15	0.12	0.23	0.06	-0.87	0.39	0.49	0.19	0.24	0.25	N
C82	-0.02	0.2	0.43	0.62	0.42	0.36	0.3	0.14	0.34	0.12	0.08	0.81	0.74	0.37	0.33	0.32	Y
C83	0.06	0.1	-0.05	0.32	0.35	0.22	0.36	0.18	0.47	0.46	0.82	0.51	0.49	0.39	0.76	0.42	N
C84	0.38	0.3	0.34	0.63	0.43	0.33	0.44	0.35	0.54	0.47	1.11	0.97	0.51	0.48	0.8	0.57	Y
C85	0.43	0.28	-0.1	0.67	0.17	0.15	0.65	0.41	0.24	0.36	0.36	0.94	0.17	0.38	0.52	0.21	N
C86	0.4	0.23	0.39	1.5	0.88	0.63	0.87	0.6	0.11	-0.11	0.13	0.94	0.54	0.44	0.52	0.41	Y
C87	0.2	0.23	0.2	0.47	0.06	0.17	0.08	0.03	0.21	0.15	0.26	0.51	0.08	0.48	0.54	0.28	N
C88	0.43	0.34	0.31	0.94	0.44	0.43	0.46	0.42	0.64	0.51	0.6	0.68	0.71	0.72	0.46	0.35	Y

C89	0.74	0.24	0.16	0.3	0.37	0.64	0.35	0.25	0.29	0.02	-0.1	0.76	-1.02	0.27	0.44	0.24	N
C90	0.71	0.64	0.76	0.72	0.79	0.6	0.71	0.65	0.62	0.4	0.12	0.79	0.84	0.38	0.8	0.57	Y
C91	0.05	-0.11	-0.1	0.49	0.47	0.62	0.46	0.16	0.48	0.35	0.34	0.51	0.25	0.45	0.4	0.27	N
C92	0.27	0.32	0.65	0.83	0.28	0.87	0.53	0.36	0.54	0.66	0.42	0.61	0.46	0.48	0.87	0.59	Y
C93	0.48	-0.18	-1.17	0.51	0.43	0.27	0.79	0.3	0.55	0.37	0.33	0.3	0.16	0.17	0.31	0.11	N
C94	0.58	0.48	0.35	1.18	0.66	0.67	0.6	0.48	0.53	0.44	0.26	0.57	0.47	0.3	0.33	0.42	Y
C95	0.52	0.58	0.51	0.34	0.49	0.64	0.83	0.49	0.53	0.15	-0.91	0.1	0.46	0.44	0.44	0.24	N
C96	0.79	0.59	0.81	0.99	0.87	0.92	1	0.77	0.82	0.54	0.26	0.75	0.77	0.72	0.61	0.6	Y
C97	0.28	-0.16	-0.6	0.52	0.72	0.62	0.4	0.29	0.04	0.4	0.41	1.19	0.41	-0.21	-1.03	-0.59	N
C98	0.47	0.38	0.4	1.11	0.94	0.45	0.47	0.37	0.31	0.44	0.55	1.47	0.67	0.53	0.41	0.28	Y
C99	0.16	0.09	0.05	0.93	0.73	0.37	0.45	0.23	0.11	-0.05	-0.06	0.99	0.98	0.62	0.57	0.3	N
C100	0.36	0.31	0.22	1.34	0.99	0.81	0.39	0.31	0.53	0.49	0.4	1	0.56	0.57	0.78	0.49	Y

1.2 EPI DATA FOR THE INDEX FINGER BEFORE AND AFTER THE MEDITATION

Name	Descending colon_Pre	Sigmoid colon_Pre	Rectum_Pre	Coccyx, Pelvis minor zone_Pre	Sacrum_Pre	Lumbar zone_Pre	Thor axzone_Pre	Cervical zone_Pre	Transverse colon_Pre	Descending colon_post	Sigmoid colon_post	Rectum_post	Coccyx, Pelvis minor zone_post	Sacrum_post	Lumbar zone_post	Thor axzone_post	Cervical zone_post	Transverse colon_post	Filter
C1	0.17	0.2	0.55	0.62	0.96	0.28	0.21	0.29	0.11	-0.01	0.11	1.17	1.3	0.83	0.31	-0.12	-0.1	0.19	N
C2	0.19	0.62	0.93	1.03	0.66	0.47	0.49	0.46	0.12	0.27	0.26	0.85	1.09	0.86	0.66	0.31	0.24	-0.14	Y
C3	0.29	0.35	0.73	0.68	0.43	0.22	0.14	0.32	0.35	0.11	0.13	0.38	0.75	0.76	0.59	0.16	0.43	0.07	N
C4	0.42	0.39	0.87	0.88	0.63	0.26	0.29	0.33	0.16	0.37	0.39	0.72	0.91	0.84	0.48	0.5	0.4	0.18	Y
C5	-0.09	0.09	0.69	0.55	0.84	0.03	-0.12	0.05	-0.03	-0.1	-0.31	-0.09	0.15	0.56	0.26	-0.32	0.11	0.16	N
C6	0.01	0.05	0.37	0.34	0.58	0.26	0.39	0.39	0.27	0.25	0.22	0.77	0.86	0.86	0.38	0.33	0.38	0.38	Y
C7	-0.21	-0.51	0.01	0.1	0.63	0.58	0.04	0.15	0.25	0.17	-0.13	0.16	0.49	0.47	0.48	0.1	0.1	0.25	N
C8	0.33	0.24	0.55	0.68	1	0.92	0.43	0.28	0.38	0.29	0.36	0.54	0.66	0.63	0.41	0.33	0.41	0.27	Y
C9	-0.12	0.24	0.51	0.96	0.46	0.1	0.18	0.44	0.26	0	0.08	0.38	0.32	0.49	0.38	0.13	0.19	0.29	N
C10	0.25	0.29	0.5	0.82	1.05	0.64	0.59	0.7	0.38	0.37	0.19	0.5	0.71	1.07	0.7	0.43	0.58	0.37	Y

C11	-0.21	0.13	0.67	0.81	0.47	0.05	-0.44	-0.31	-0.2	0.1	0.29	0.72	0.86	0.31	-0.22	0.01	-0.33	-0.08	N
C12	0.11	-0.08	0.39	0.5	0.34	0.26	-0.05	0.01	0.05	-0.65	0.29	0.73	0.84	0.9	0.12	-0.51	-0.61	0.09	Y
C13	0.28	0.75	1.21	0.59	0.31	0.05	-0.19	0.26	0.3	0.4	0.65	1.49	1.04	0.51	0.06	0.16	0.33	0.16	N
C14	0.61	0.49	0.8	0.96	0.51	0.35	0.35	0.43	0.4	0.42	0.52	0.99	0.91	0.62	0.1	0.02	0.03	0.08	Y
C15	0.18	0.31	0.18	0.49	0.38	0.28	0.24	0.21	0.28	0.18	0.31	0.18	0.49	0.38	0.28	0.24	0.21	0.28	N
C16	0.34	0.28	0.93	0.87	0.67	0.47	0.33	0.26	0.34	0.34	0.28	0.93	0.87	0.67	0.47	0.33	0.26	0.34	Y
C17	0.11	0.38	0.97	0.67	0.18	0.21	0	-0.01	0.15	-0.89	-0.44	0.22	0.46	0.49	-0.51	-0.32	0.07	-0.1	N
C18	0.85	1.27	1.01	0.98	0.45	0.14	0.38	0.7	0.57	0.15	0.11	0.16	0.59	0.37	0.17	0.03	-0.19	0.15	Y
C19	0.17	0.24	0.53	0.48	0.36	0.19	0.25	0.4	0.23	0.13	0.12	0.46	0.84	0.39	0.05	0.07	0.06	0.08	N
C20	0.37	0.32	0.87	0.81	0.71	0.49	0.47	0.56	0.36	0.38	0.59	1.29	1.1	0.57	0.17	0.24	0.31	0.19	Y
C21	0.38	1.03	1.11	0.72	0.27	-0.34	-1.34	-0.65	-0.53	0.1	-0.19	0.03	0.76	1.11	0.44	0.33	0.11	0.08	N
C22	0.39	0.79	1.01	1.22	0.83	0.12	0.17	0.43	0.35	0.62	0.44	0.47	0.33	0.57	0.87	0.57	0.48	0.55	Y
C23	0.01	0.12	0.46	0.34	0.09	0.01	0.12	-0.02	0.09	0.04	0.52	0.71	0.7	0.19	0.06	-0.26	0.18	0.16	N
C24	0.31	0.79	1.2	1	0.41	0.19	0.09	0.2	0.03	0.69	1.19	1.3	1.09	0.42	0.09	0.34	0.41	0.26	Y
C25	0.1	-0.19	0.03	0.76	1.11	0.44	0.33	0.11	0.08	0.17	0.2	0.61	1.07	0.23	0.03	0.05	0.24	0.04	N

C26	0.62	0.44	0.47	0.33	0.57	0.87	0.57	0.48	0.55	0.33	0.35	0.7	0.87	0.61	0.2	0.34	0.42	0.2	Y
C27	-0.56	-1.13	-0.76	-1.01	-1.81	-0.89	0.4	0.68	0.29	0.2	0.43	0.73	0.79	0.16	-0.2	0.1	0.48	0.23	N
C28	0.26	0.09	0.44	0.91	0.87	0.64	0.53	0.76	0.57	0	0.34	0.57	0.44	0.35	-0.17	0.06	0.25	0.14	Y
C29	0.08	0.75	0.81	0.77	0.62	0.32	0.28	0.47	0.13	-0.04	0.52	0.47	0.59	0.24	0.02	0.35	0.32	0.31	N
C30	0.68	0.87	1.03	1.03	1.07	0.66	0.48	0.66	0.44	0.24	0.6	0.59	0.81	1	0.45	0.34	0.34	0.4	Y
C31	0.02	-0.14	0.21	0.71	0.84	0.08	0.51	0.07	-0.2	0.02	-0.4	0.45	0.24	0.32	0.09	0.37	0.47	0.34	N
C32	0.16	0.14	0.51	0.68	0.96	0.89	0.75	0.58	0.37	0.38	0.61	0.88	1.12	1.05	0.75	0.84	0.77	0.51	Y
C33	0.11	0.3	0.82	1.58	0.96	0.51	0.26	0.2	0.16	-0.15	-0.25	0.38	0.73	0.38	0.1	-0.19	-0.38	0.14	N
C34	0.38	0.28	0.59	1.05	1.04	0.59	0.33	0.42	0.39	0.06	-0.16	0.24	0.65	0.71	0.45	0.13	0.08	0.16	Y
C35	0.15	0.35	0.52	0.82	0.38	0.07	0.22	0.31	0.12	0.47	0.16	-0.15	0.34	0.42	0.41	0.46	0.25	0.24	N
C36	0.42	0.31	0.89	0.86	0.61	0.09	0.13	0.25	0.21	0.52	0.05	0.71	0.74	0.63	0.48	0.18	0.3	0.45	Y
C37	0.21	0.5	0.43	0.5	0.84	0.36	0.46	0.33	0.33	0.03	0.06	0.22	-0.27	0.06	-0.96	-0.61	-0.69	-0.11	N
C38	0.44	0.51	0.72	1.05	1.03	0.43	0.23	0.62	0.3	0.19	0.17	0.21	0.52	0.39	0.39	0.25	0.25	0.27	Y
C39	0.37	0.33	0.28	0.32	0.1	0.05	0.09	0.16	0.2	0.09	0.17	0.54	0.79	0.36	-0.13	0.06	-0.55	0.1	N
C40	0.21	0.34	0.53	0.79	0.71	0.39	0.46	0.32	0.32	0	0.12	0.86	1.09	0.94	0.46	0.08	0.28	0.15	Y

C41	-1.17	0.26	0.49	0.9	0.13	-1.34	-0.56	0.42	-0.35	0.21	0.5	0.43	0.5	0.84	0.36	0.46	0.33	0.33	N
C42	0.61	0.74	1.38	0.99	0.01	0.05	-0.22	-0.71	0.26	0.44	0.51	0.72	1.05	1.03	0.43	0.23	0.62	0.3	Y
C43	-0.05	0.08	0.27	0.79	0.34	0.16	0.21	0.39	0.15	-0.16	0.24	0.24	0.21	-1.42	-1.16	0.02	0.08	0.08	N
C44	0.17	0.32	0.76	0.62	0.21	0.08	0.18	0.28	0.3	-0.42	0.57	0.36	0.6	0.24	0.25	0.35	0.05	0	Y
C45	0.14	0.42	0.58	0.26	0.22	0.03	0.1	0.22	0.03	0.05	0.19	0.39	0.59	0.32	-0.56	-0.13	0	0.05	N
C46	0.82	0.98	0.9	0.7	0.56	0.24	0.22	0.44	0.37	0.12	0.21	0.84	1.13	0.73	0.16	-0.23	0.07	0.21	Y
C47	0.34	0.4	0.57	0.8	0.82	0.19	0.23	0.43	0.37	-0.57	0.04	0.82	0.68	1.26	0.4	0.26	0.17	0.19	N
C48	0.29	0.66	1.03	1.26	1.03	0.33	0.35	0.64	0.42	0.25	0.26	0.62	0.87	0.83	0.41	0.5	0.45	0.43	Y
C49	-0.58	-1.07	-0.97	-0.22	0.38	0.55	0.3	0.28	0.11	0.12	0.26	0.38	0.37	0.3	0.11	0.17	0.51	0.28	N
C50	0.36	0.37	0.57	0.81	0.64	0.45	0.24	0.48	0.41	0.4	0.6	0.95	0.6	0.49	0.63	0.49	0.71	0.54	Y
C51	0.34	0.52	0.81	0.56	0.92	0.44	0.23	0.56	0.21	0.01	0.13	0.49	0.71	0.53	0.18	0.12	0.22	0.25	N
C52	0.4	0.8	1	1.18	0.99	0.77	0.7	0.82	0.54	0.35	0.22	0.53	1.06	0.5	0.41	0.37	0.47	0.24	Y
C53	0.11	0.05	0.42	0.2	0.43	0.2	0.09	0.31	0.27	0.1	0.24	0.51	0.51	0.8	0.33	0.27	0.49	0.21	N
C54	0.56	0.88	0.74	0.87	0.62	0.53	0.67	0.09	0.19	0.3	0.55	0.79	1.16	0.94	0.57	0.36	0.61	0.42	Y
C55	0	0.73	0.8	0.58	0.01	-0.35	0.14	0.35	0.16	0.15	0.5	1.08	0.72	0.67	0.43	-0.16	0.23	0.12	N

C56	0.62	1.01	0.93	0.86	0.69	0.48	0.44	0.47	0.56	0.45	0.34	1.09	1.29	1.04	0.53	0.4	0.46	0.39	Y
C57	-0.01	0.61	0.83	0.66	-1.1	-2.01	-0.38	0.29	0.13	-0.27	-0.37	0.26	0.34	0.58	0.32	0.14	0.43	0.21	N
C58	-0.05	0.66	0.95	0.26	0.33	0.31	0.28	0.27	0.24	0.31	0.26	0.59	0.57	0.93	0.76	0.8	0.71	0.47	Y
C59	0.52	0.16	0.77	0.44	0.63	0.39	0	0.22	0.04	-0.4	-0.23	0.5	0.89	0.46	0.01	-0.6	-0.42	-0.16	N
C60	0.49	0.78	1.1	1.26	0.86	0.34	0.24	0.34	0.12	0.08	0.14	0.8	1.11	0.83	0.29	0.14	0.17	0.2	Y
C61	0.25	0.01	0.17	0.36	0.07	0.24	0.16	0.04	0.11	-0.37	0.71	0.87	0.7	0.46	0.21	0.35	0.4	0.09	N
C62	0.59	0.61	0.95	0.84	0.65	0.51	0.42	0.34	0.41	0.6	0.9	1.23	0.83	0.53	0.45	0.35	0.61	0.12	Y
C63	0.2	0.27	0.7	0.55	0.14	0.23	0.34	0.59	0.22	-0.08	-0.49	0.74	0.41	0.46	0.26	0.17	0.13	-0.46	N
C64	0.4	0.66	1.03	1.16	0.47	0.19	0.33	0.61	0.49	0.35	0.21	0.82	0.98	0.77	0.54	0.4	0.6	0.31	Y
C65	0.21	0.18	0.58	0.66	0.57	0.3	0.04	0.44	0.24	-0.02	-0.58	0.35	0.35	0.08	-0.01	-0.13	0.09	0.11	N
C66	0.19	0.22	0.95	1.29	0.98	0.77	0.45	0.5	0.36	0.63	0.7	1.15	0.89	0.41	0.13	0.26	0.44	0.34	Y
C67	0.14	0.26	0.45	1	0.44	0.05	-0.29	0.11	0.11	0.12	0.06	0.22	0.45	0.47	0.24	0.15	0.14	0.14	N
C68	0.27	0.44	0.71	0.61	0.76	0.34	0.27	0.26	0.32	0.27	0.42	0.87	0.96	0.71	0.21	0.38	0.41	0.34	Y
C69	0.21	0.02	0.17	0.2	0.23	0.18	0.05	0.09	0.11	-0.4	-0.98	-1.15	0.18	0.3	-0.75	-0.8	0.01	-0.56	N
C70	0.14	0.2	0.5	0.76	0.54	0.52	0.32	0.45	0.09	0.26	0.54	1.03	0.93	0.66	0.26	0.38	0.45	0.31	Y

C71	0.12	0.89	0.41	-0.13	0.08	-1.55	-0.96	0.52	0.34	0.13	0.54	0.51	0.29	0.15	0.09	0.17	0.4	0.27	N
C72	0.42	0.87	1.11	0.88	0.61	0.38	0.41	0.51	0.44	0.3	0.31	0.68	0.91	0.63	0.33	0.28	0.6	0.55	Y
C73	-0.47	-0.47	0.06	0.41	0.24	0.11	-0.16	0.04	-0.24	0.1	0.42	0.63	0.73	0.05	0.16	0.37	0.5	0.25	N
C74	0.25	0.27	0.57	0.73	0.54	0.16	0.2	0.21	0.16	0.29	0.23	0.63	1.11	0.93	0.32	0.31	0.55	0.39	Y
C75	-0.16	0.27	0.66	0.59	0.58	-0.11	-0.28	0.09	0.16	-0.12	-0.72	0.2	0.22	0.21	-0.06	-0.71	0.01	-0.18	N
C76	0.25	0.68	0.84	0.71	0.47	0.3	0.19	0.46	0.24	0.29	0.02	0.51	0.65	0.34	0.11	0.18	0.25	0.27	Y
C77	0.32	0.29	0.34	0.62	0.51	0.15	0.24	0.55	0.35	-0.33	-0.1	0.46	0.9	0.8	0.34	0.18	0.07	-0.09	N
C78	0.61	0.62	1.22	1.14	0.81	0.26	0.37	0.35	0.27	0.35	0.65	0.88	0.74	0.55	0.18	0.2	0.39	0.27	Y
C79	-0.54	0.22	0.61	1.13	0.89	0.41	0.18	0.22	0.1	0.18	0.56	0.96	0.36	-0.24	-1.39	-0.5	-0.09	0.05	N
C80	0.29	0.59	1.06	1.19	0.96	0.34	0.25	0.26	0.27	0.49	0.55	0.97	1.13	0.68	0.4	0.28	0.15	0.27	Y
C81	0.16	0.47	0.6	0.53	0.18	-0.6	-0.45	-0.12	-0.26	-0.36	-0.06	-0.14	0.32	0.62	0.31	0.14	0.26	0.13	N
C82	0.27	0.28	0.33	0.43	0.28	0.28	0.17	0.23	0.33	0.15	0.36	0.53	0.7	0.65	0.31	0.28	0.37	0.11	Y
C83	0.15	0.14	0.17	0.11	0.03	0.23	0.27	0.24	0.2	-0.98	0.05	0.43	0.1	-0.51	0.05	0.15	0.55	0.08	N
C84	0.19	0.49	0.97	0.78	0.68	0.46	0.34	0.22	0.24	0.43	0.72	0.64	0.42	0.29	0.2	0.35	0.6	0.16	Y
C85	0.27	0.35	0.62	0.55	0.44	0.25	-0.09	0.15	0.24	-0.17	-0.14	0.45	0.9	0.5	0.27	0.16	0.12	0.15	N

C86	0.35	0.42	0.93	1.19	0.91	0.57	0.37	0.58	0.43	-0.18	0.13	0.61	0.65	0.55	0.43	0.18	0.22	0.16	Y
C87	0.03	0.1	0.31	0.14	0.16	0.13	0.03	0.11	0.09	0.01	-0.28	0.13	0.41	0.28	0.15	-0.33	-0.38	0.1	N
C88	0.29	0.22	0.5	0.77	0.83	0.67	0.43	0.25	0.22	0.18	0.22	0.31	0.61	0.29	0.19	0.18	0.33	0.23	Y
C89	0.37	0.25	0.35	0.32	0.19	0.31	0.41	0.32	0.24	-1.21	0.13	0.41	0.64	0.31	0.06	0.04	0.11	0.02	N
C90	0.4	0.56	0.7	0.89	0.77	0.43	0.47	0.68	0.48	0.18	0.68	1.12	0.87	0.84	0.24	0.17	0.26	0.29	Y
C91	-0.62	0.13	0.28	0.53	0.39	-0.07	0.01	0.07	-0.38	0.26	0.06	0.11	0.36	0.58	0.35	-0.11	0.18	0.11	N
C92	0.16	0.39	0.72	1.04	0.73	0.23	0.18	0.26	0.18	0.44	0.34	0.37	0.59	0.53	0.33	0.42	0.44	0.38	Y
C93	0.28	0.19	0.35	0.25	0.08	0.12	0.12	0.34	0.3	0.44	0.11	0.61	0.96	0.92	0.63	0.49	0.43	0.22	N
C94	0.42	0.54	0.96	0.7	0.84	0.24	0.53	0.68	0.31	-0.01	-0.1	0.47	0.8	0.57	0.52	0.31	0.23	0.47	Y
C95	0.25	0.07	0.81	0.89	0.89	0.57	0.27	0.55	0.42	0.04	-0.33	-0.22	-0.1	0.33	0.17	0.12	0.24	0.15	N
C96	0.4	0.66	1.18	1.14	0.82	0.41	0.44	0.65	0.66	0.35	0.33	0.52	0.9	0.37	0.68	0.63	0.44	0.44	Y
C97	0.18	0.57	0.66	0.58	0.88	0.94	0.34	0.31	0.16	0.18	0	0.32	0.58	-1.53	-0.85	0.12	-0.13	-0.61	N
C98	0.31	0.81	0.93	0.59	0.81	0.8	0.37	0.36	0.44	0.21	0.34	1.03	1.38	0.67	0.35	0.13	0.23	0.23	Y
C99	0.23	0.4	0.58	0.53	0.25	0.06	-0.27	0.09	0.15	0.28	0.27	0.93	1.29	0.57	0.16	0.02	-0.03	0.38	N
C100	0.75	0.92	1.14	1.13	0.43	0.3	0.33	0.32	0.43	0.57	0.91	1.12	0.5	-0.04	-0.19	0.15	0.6	0.44	Y

1.3 EPI DATA FOR THE MIDDLE FINGER BEFORE AND AFTER THE MEDITATION

Name	Cardiovascular system_Pre	Left kidney_Pre	Liver_Pre	Abdominal zone_Pre	Immune system_Pre	Thoraxzone, Respiratory system_Pre	Cerebral zone (vessels)_Pre	Gallbladder_Pre	Right kidney_Pre	Cardiovascular system_Post	Left kidney_Post	Liver_Post	Abdominal zone_Post	Immune system_Post	Thoraxzone, Respiratory system_Post	Cerebral zone (vessels)_Post	Gallbladder_Post	Right kidney_Post	Filter
C1	0.44	0.47	0.28	0.3	0.2	0.4	0.31	0.36	0.68	0.37	0.69	0.37	0.17	0.36	0.47	0.32	0.28	0.34	N
C2	0.58	0.71	0.74	0.42	0.38	0.48	0.35	0.55	0.86	0.66	0.8	0.66	0.22	0.37	0.55	0.09	0.35	0.76	Y
C3	0.24	0.35	0.26	0.2	0.06	0.38	0.26	0.13	0.18	0.28	0.4	0.22	0.09	0.21	0.15	0.23	-0.26	0.52	N
C4	0.43	0.53	0.71	0.37	0.28	0.37	0.06	0.54	0.63	0.53	0.8	0.59	0.45	0.36	0.62	0.16	0.43	0.81	Y
C5	-0.09	0.31	0.7	0.21	-0.06	-0.03	0.04	0.01	0.06	-0.45	-0.49	0.05	0.16	-0.22	0.09	-0.24	-1.09	0.12	N
C6	0.27	0.41	0.43	0.39	0.26	0.29	0.24	0.09	0.6	0.28	0.42	0.66	0.5	0.3	0.41	0.28	0.23	0.6	Y
C7	0.23	0.19	0.29	0.47	0.24	0.1	0.43	0.26	0.42	0.13	-0.34	-0.11	0.23	0.27	0.42	0.35	0.27	0.26	N

C8	0.32	0.58	0.95	0.71	0.39	0.35	0.46	0.4	0.73	0.33	0.47	0.4	0.37	0.45	0.64	0.45	0.24	0.08	Y
C9	0.16	0.13	0.36	0.05	-0.15	0.38	0.06	0	0.58	0.34	0.16	0.62	0.57	0.34	0.67	0.29	0.12	0.72	N
C10	0.33	0.46	0.86	0.42	0.48	0.55	0.23	0.35	0.93	0.53	0.66	0.95	0.39	0.43	0.85	0.35	0.1	0.81	Y
C11	0.19	0.37	0.45	-0.45	0.13	0.08	0.03	0.02	0.34	0.28	1.01	0.57	0.1	-0.26	0.31	0.14	0.1	0.7	N
C12	0.28	0.31	0.33	0.42	0.27	0.31	0.2	0.33	0.66	0.16	0.24	-0.18	-0.18	-0.92	-0.14	-0.59	0.19	0.11	Y
C13	0.22	0.61	0.222	0.04	0.13	0.28	0.14	-0.35	0.19	0.18	0.85	0.47	0.17	-0.27	0.2	0.14	-0.23	0.51	N
C14	0.62	1.05	0.73	0.3	0.14	0.32	0.28	0.45	0.39	0.48	0.66	0.25	0.07	0.23	0.36	0.17	0.23	0.91	Y
C15	0.42	0.55	0.35	0.16	0.39	0.51	0.27	0.29	0.35	0.42	0.55	0.35	0.16	0.39	0.51	0.27	0.29	0.35	N
C16	0.65	0.72	0.74	0.65	0.54	0.68	0.57	0.6	0.67	0.65	0.72	0.74	0.65	0.54	0.68	0.57	0.6	0.67	Y
C17	-0.28	-2.29	-0.46	0.2	0.32	0.53	0.23	-1.42	-0.54	-0.36	-0.18	-0.29	-0.16	0.08	0.41	0	-1.09	-0.06	N
C18	0.39	0.83	0.79	0.21	0.42	0.86	0.52	0.43	0.89	0.16	0.19	0.35	0.32	0.32	0.32	0.2	0.07	0.34	Y
C19	0.3	0.5	0.21	0.12	0.37	0.55	0.19	0.17	0.45	0.39	0.68	0.36	0.11	0.22	0.57	0.28	-0.43	0.4	N
C20	0.37	0.7	0.73	0.35	0.4	0.71	0.29	0.51	0.75	0.48	0.79	0.32	0.54	0.29	0.68	0.34	0.25	0.76	Y
C21	0.3	0.6	0.06	0.09	0.11	-1.39	-2.25	0.11	0.28	0.46	1.54	1.74	0.42	-0.85	0.17	0.14	-0.38	1.08	N
C22	0.68	1	0.53	0.32	0.27	0.53	0.32	0.26	0.95	0.53	1.25	1.34	0.66	0.39	0.52	0.56	0.38	0.55	Y

C23	0.35	0.46	0.46	0.03	0.16	0.21	0.1	0.11	0.64	0.29	0.22	0.29	0.19	0.36	0.44	0.09	-0.57	0.63	N
C24	0.35	0.94	0.8	0.16	0.36	0.3	0.2	0.36	0.72	0.8	1.37	0.65	0.11	0.59	0.61	0.35	0.38	0.88	Y
C25	0.46	1.54	1.74	0.42	-0.85	0.17	0.14	-0.38	1.08	0.16	0.31	0.35	0.08	0.14	0.42	0.07	0.5	0.48	N
C26	0.53	1.25	1.34	0.66	0.39	0.52	0.56	0.38	0.55	0.51	0.81	0.67	0.27	0.27	0.51	0.15	0.53	0.63	Y
C27	0.11	-1.04	-1.41	-0.57	0.28	0.59	0.46	0.03	0.24	0.48	0.78	0.35	0.16	-0.35	0.23	0.19	-0.39	0.51	N
C28	0.52	0.78	0.92	0.74	0.58	0.74	0.5	0.33	0.89	0.39	0.72	0.42	0.12	0.03	0.33	0.26	0.24	0.54	Y
C29	0.16	0.76	1.12	0.56	0.23	0.24	-0.35	0.52	0.69	0.4	1.04	0.88	0.6	0.5	0.57	0.35	0.22	0.83	N
C30	0.44	0.91	0.93	0.88	0.41	0.52	0.16	0.89	0.74	0.41	0.73	0.85	0.63	0.23	0.38	0.35	0.59	1	Y
C31	0.08	-0.68	-0.9	-1.35	-1.21	-0.83	-0.72	-0.74	0.25	-0.15	0.58	0.31	-0.04	-0.11	0.45	0.11	0.27	0.32	N
C32	0.57	0.61	0.87	0.5	0.12	0.56	0.36	0.16	0.6	0.52	0.96	0.96	0.68	0.57	0.72	0.46	0.73	0.85	Y
C33	0.34	0.49	0.35	0.06	0.24	0.26	0	0.25	0.26	-0.31	0.34	0.41	0.36	0.21	0.13	0.07	0.03	-0.19	N
C34	0.37	0.63	0.8	0.81	0.47	0.8	0.47	0.49	0.87	0.33	0.5	0.52	0.58	0.44	0.39	0.24	0.94	0.47	Y
C35	0.24	0.77	0.31	0.09	0.01	0.27	0.09	-0.42	0.37	0.27	0.08	0.72	0.42	0.21	0.29	0.22	-0.11	0.08	N
C36	0.3	0.61	0.42	0.12	0.21	0.41	0.2	0.11	0.5	0.59	0.5	0.69	0.44	0.3	0.52	0.22	0.06	0.72	Y
C37	0.52	0.5	0.1	0.28	0.19	0.69	0.43	0.05	0.1	-1.6	-2.12	-1.69	0.05	0.14	0.37	-0.05	-0.85	-0.68	N

C38	0.35	0.12	0.07	0.21	0.41	0.31	0.29	0.46	1.16	0.36	0.41	0.27	0.07	0.04	0.47	0.22	0.21	0.41	Y
C39	0.18	0.42	0.43	-0.43	0.27	0.57	0.25	0.21	0.41	0.39	0.49	0.33	0.07	0.16	0.4	0.19	0.01	0.57	N
C40	0.47	0.85	0.93	0.68	0.31	0.48	0.35	0.26	0.59	0.1	0.82	1.15	0.82	0.06	0.8	0.42	0.38	0.76	Y
C41	-0.31	0.31	0.08	-1.67	-1.14	0.29	-0.12	-1.86	0.43	0.52	0.5	0.1	0.28	0.19	0.69	0.43	0.05	0.1	N
C42	0.05	1.01	0.19	-0.14	0.13	0.27	-1.01	1	0.33	0.35	0.12	0.07	0.21	0.41	0.31	0.29	0.46	1.16	Y
C43	0.11	0.45	0.5	0.1	0.5	0.52	0.09	0.15	0.36	0.13	-1.07	-0.39	-0.5	0.04	0.12	-0.13	0.17	0.11	N
C44	0.35	0.65	0.59	0.25	0.31	0.35	0.11	0.68	0.49	0.11	0.51	0.92	0.2	0.22	0.32	0.2	0.19	0.18	Y
C45	0.09	0.54	0.4	0.32	0.14	0.52	-0.63	0.01	0.57	0.08	0.24	0.08	-0.25	0	0.15	0.17	0.15	0.76	N
C46	0.57	0.67	0.43	0.17	0.37	0.65	0.33	-0.25	1.17	0.31	0.7	0.59	0.23	0.35	0.43	0.25	0.34	0.62	Y
C47	0.19	0.27	0.51	0.45	0.35	0.51	0.17	0.18	0.16	-0.16	-0.09	0.34	0.53	0.37	0.42	0.23	0.21	0.22	N
C48	0.43	0.91	0.81	0.41	0.4	0.75	0.36	0.41	0.75	0.32	0.68	0.92	0.53	0.37	0.61	0.4	0.24	0.72	Y
C49	0.19	0.44	0.34	0.41	0.13	0.25	0.16	0.08	0.31	0.15	0.43	0.54	0.06	0.34	0.41	0.34	-0.04	0.3	N
C50	0.45	0.8	0.77	0.55	0.28	0.39	0.33	0.51	0.56	0.51	0.65	0.37	0.46	0.4	0.64	0.46	0.33	0.79	Y
C51	0.19	0.72	0.61	0	0.21	0.72	0.16	0.43	0.75	0.02	-0.26	0.65	0.39	0.16	0.49	0.35	-0.19	-0.65	N
C52	0.66	1.15	0.93	0.61	0.45	0.83	0.44	0.77	1.25	0.4	0.96	0.55	0.35	0.35	0.6	0.35	0.67	0.61	Y

C53	0.15	0.48	0.42	0.38	0.17	0.21	0.06	-0.99	-0.22	0.34	0.98	0.9	0.28	0.1	0.43	0.09	0.35	0.75	N
C54	0.5	1	0.76	0.68	0.39	0.43	0.35	0.38	0.88	0.62	0.9	0.89	0.46	0.43	0.6	0.46	0.04	0.98	Y
C55	0.24	0.38	-0.22	-1.09	-0.14	0.57	0.34	0.59	0.25	0.31	0.93	0.82	0.31	0.05	0.26	0.02	0.44	0.6	N
C56	0.5	0.87	0.52	0.2	0.18	0.7	0.47	0.79	0.4	0.66	0.94	0.59	0.44	0.42	0.62	0.47	0.68	0.97	Y
C57	0.4	0.62	-0.57	-1.19	0.09	0.26	0.03	0.13	0.48	0.32	0.56	0.45	0.49	0.34	0.47	0.18	0.64	0.27	N
C58	0.26	0.24	0.65	0.36	0.02	0.36	0.33	0.54	0.78	0.65	0.61	0.58	0.53	0.32	0.75	0.53	0.71	0.74	Y
C59	-0.3	0.03	0.4	0.55	0.33	0.16	0.03	0.28	-0.21	0.13	0.33	0.38	0.19	0.05	0.14	0.09	0.13	0.08	N
C60	0.39	0.56	1.04	0.6	0.49	0.62	0.03	0.67	0.78	0.3	0.58	0.56	0.51	0.16	0.35	-0.09	0.51	0.76	Y
C61	0.21	0.42	0.29	0.43	0.22	0.25	0.17	0.08	0.22	0.29	0.63	0.58	0.06	0.12	0.17	0.21	0.01	0.4	N
C62	0.33	0.74	0.42	0.63	0.38	0.45	0.21	0.43	0.72	0.54	1.06	0.42	0.45	0.43	0.51	0.3	0.36	1.04	Y
C63	0.09	0.19	0.22	0.17	0.38	0.64	0.18	0.35	0.35	0.3	-0.73	-0.53	-0.11	0.25	0.59	0.29	-0.21	0.42	N
C64	0.51	0.84	0.63	0.42	0.32	0.63	0.4	0.69	0.67	0.42	0.61	0.86	0.37	0.3	0.67	0.36	0.35	0.56	Y
C65	0.22	0.34	0.35	0.01	0.03	0.59	0.13	0.74	-0.47	-0.04	-0.07	-0.05	-0.12	-0.11	0.5	-0.17	-0.74	-0.72	N
C66	0.3	0.87	0.6	0.33	0.66	0.84	0.39	0.12	0.63	0.63	0.99	0.41	0.03	0.45	0.68	0.37	0.47	0.57	Y

C67	0.36	0.49	0.61	0.29	0.18	0.15	0.33	-0.43	0.16	0.13	0.59	0.39	0.18	0.07	0.23	0.11	-0.68	0.43	N
C68	0.28	0.82	0.84	0.58	0.34	0.31	0.47	0.26	0.65	0.3	0.73	0.97	0.46	0.24	0.3	0.26	0.13	0.72	Y
C69	0.18	0.31	0.19	0.11	0.41	0.37	0.08	-0.38	-0.25	-1.76	0.47	0.09	-0.98	-0.03	-0.49	-0.12	-0.33	0.09	N
C70	0.4	1.02	0.62	0.16	0.19	0.31	0.16	0.27	0.72	0.38	0.94	0.67	0.3	0.25	0.31	0.28	0.43	0.75	Y
C71	0.49	0.55	0.35	0.13	0.48	0.52	0.19	-0.28	-0.2	0.19	0.42	0.38	-0.4	0.2	0.49	0.3	0.12	0.14	N
C72	0.56	0.71	0.7	0.58	0.44	0.8	0.51	0.26	0.74	0.51	0.92	0.42	0.43	0.29	0.88	0.48	0.12	0.57	Y
C73	0.05	0.23	0.08	-0.13	0.11	0.2	-0.07	-0.52	0.1	0.08	0.5	0.15	0.17	0.08	0.41	0.12	0.19	0.38	N
C74	0.19	0.46	0.46	0.18	0.22	0.34	0.2	0.05	0.73	0.58	0.88	0.71	0.57	0.12	0.28	0.08	0.83	0.54	Y
C75	0.47	0.42	0.18	0.38	0.16	0.45	0.12	-0.82	0.77	0.15	0.2	-0.13	0	0.24	0.08	0.05	-0.89	0.29	N
C76	0.48	0.73	0.73	0.25	0.25	0.51	0.28	0.19	0.7	0.11	0.75	0.73	0.21	0.16	0.19	0.05	0.34	0.59	Y
C77	0.25	0.47	0.47	0.36	0.37	0.56	0.3	0.2	0.56	0.18	0.07	0.28	0.29	0.04	0.2	0.14	-0.51	0.51	N
C78	0.59	0.99	0.69	0.5	0.4	0.83	0.53	0.19	0.96	0.64	0.91	0.5	0.3	0.3	0.45	0.16	0.24	1.06	Y
C79	0.2	0.44	0.43	0.46	0.36	0.38	0.16	0.19	1.01	0.12	0.42	0.58	0.23	0.19	0.12	0.09	0.12	0.22	N
C80	0.34	0.62	0.6	0.42	0.31	0.42	0.35	0.29	0.91	0.52	0.83	0.95	0.46	0.33	0.38	0.29	0.56	0.72	Y
C81	0.22	0.34	0.1	-1.33	-0.15	-0.33	-0.32	-1.9	-1.07	0.07	0.1	-0.07	0.06	0.08	0.26	0.17	-0.32	0.08	N

C82	0.28	0.9	0.66	0.39	0.12	0.38	0.1	0.34	0.68	0.34	0.38	0.3	0.23	0.32	0.5	0.26	0.47	0.7	Y
C83	0.52	-0.32	-1.63	-1.01	-0.31	0.17	0.13	0.3	-0.58	0.1	0.26	0.09	-0.47	0.26	0.39	0.04	0.15	0.54	N
C84	0.59	0.91	0.64	0.49	0.4	0.35	0.36	0.42	0.7	0.54	0.49	0.39	0.17	0.3	0.56	0.26	0.6	0.49	Y
C85	0.05	-0.13	0.18	0.37	0.04	0.37	0.24	0.27	0.29	-0.06	0.28	0.16	0.23	0.19	0.21	0.12	0.13	0.36	N
C86	0.48	0.89	0.78	0.43	0.33	0.48	0.44	0.53	0.8	-0.23	0.51	0.46	0.24	0.21	0.24	0.37	0.38	0.18	Y
C87	0.27	0.45	0.08	-0.29	0.09	0.15	0.13	-0.45	0.2	0.09	0.4	0.34	0.08	0.03	0.13	-0.02	-0.05	0.41	N
C88	0.34	0.61	0.51	0.35	0.36	0.51	0.26	0.09	0.87	0.58	0.71	0.28	0.19	0.19	0.3	0.32	0.16	0.72	Y
C89	0.3	0.52	0.29	0.2	0.22	0.33	0.31	0.39	0.19	0.14	0.48	0.09	0.03	0.16	0.32	0.23	-1.24	0.14	N
C90	0.49	0.62	0.55	0.45	0.54	0.56	0.43	0.5	0.62	0.7	0.84	0.65	0.34	0.32	0.41	0.42	0.46	0.61	Y
C91	0.01	0.16	0.09	0.09	0.23	0.34	-0.01	0.15	0.56	0.11	0.43	0.48	0.34	0.11	0.46	0.09	-0.01	0.19	N
C92	0.27	0.46	0.79	0.53	0.29	0.42	0.38	0.5	0.25	0.32	0.48	0.64	0.22	0.39	0.66	0.33	0.49	0.55	Y
C93	0.1	0.26	0.38	0.54	0.23	0.47	0.11	0.15	0.05	0.06	0.42	0.45	0.18	0.23	0.81	0.05	0.2	-0.39	N
C94	0.5	0.73	0.76	0.63	0.64	0.81	0.34	0.48	0.5	0.54	0.65	0.65	0.15	0.15	0.54	0.43	1.04	0.23	Y
C95	0.38	0.7	0.56	0.07	0.25	0.85	0.27	0.2	0.22	0.06	0.28	0.4	0.16	-0.04	0.16	0.12	-0.03	0.41	N
C96	0.67	1.02	0.81	0.35	0.7	1.06	0.63	0.75	0.61	0.39	0.56	0.78	0.76	0.69	0.49	0.31	0.59	0.68	Y

C97	0.41	0.86	0.35	0.2	0.1	0.18	0.11	0.26	0.8	-0.1	0.48	0.41	0.04	0.2	-0.23	0.14	0.04	0.58	N
C98	0.56	0.75	0.5	0.57	0.45	0.59	0.41	0.58	1	0.41	1.13	0.78	0.18	0.29	0.18	0.08	0.44	0.62	Y
C99	0.36	0.32	0.1	-0.11	-0.47	0.28	0.38	0.35	0.4	0.34	0.44	0.14	0.12	0.15	0.45	0.47	0.35	0.67	N
C100	0.45	0.99	0.72	0.44	0.24	0.37	0.07	0.41	0.79	0.62	0.55	0.05	0.09	0.32	0.57	0.49	0.43	0.76	Y

1.4 EPI DATA FOR THE RING FINGER BEFORE AND AFTER THE MEDITATION

Name	Hypothalamus_Pre	Nervous system_Pre	Spleen_Pre	Urino-genital system_Pre	Adrenal_Pre	Pancreas_Pre	Thyroid gland_Pre	Hypophysis_Pre	Epiphysis_Pre	Hypothalamus_Post	Nervous system_Post	Spleen_Post	Urino-genital system_Post	Adrenal_Post	Pancreas_Post	Thyroid gland_Post	Hypophysis_Post	Epiphysis_Post
C1	0.51	-0.25	-0.04	0.3	0.28	0.46	0.41	0.32	0.29	0.48	0.39	0.46	0.21	0.08	0.18	0.3	0.41	0.3
C2	0.14	0.25	0.32	0.57	0.52	0.63	0.55	0.62	0.29	0.42	0.35	0.27	0.61	0.48	0.45	0.49	0.7	0.25
C3	0.1	-0.02	0.18	0.52	0.56	0.07	0.02	0.36	-0.09	0.25	0.14	0.01	0.61	0.54	0.29	0.19	0.01	0.13
C4	0.6	0.26	0.26	0.64	0.46	0.6	0.49	0.63	0.13	0.65	0.4	0.4	0.5	0.61	0.53	0.22	0.47	0.24
C5	0.21	-0.07	0.19	0.25	-0.45	-0.11	0.06	0.36	0.15	-0.21	-0.58	-0.91	0.06	-0.5	-0.18	-0.16	-0.21	-0.78
C6	0.22	-0.07	-0.13	0.19	0.29	0.29	0.34	0.2	0.34	0.35	0.19	0.09	0.52	0.38	0.12	0.39	0.44	0.34
C7	0.52	0.26	0.11	0.1	0.26	0.31	0.17	0.23	0.35	0.27	0.02	-0.09	-0.09	0.22	0.17	0.22	0.28	0.29
C8	0.5	0.26	0.23	0.54	0.85	0.46	0.33	0.38	0.45	0.65	0.25	0.48	0.38	0.35	0.4	0.32	0.58	0.43
C9	0.41	0.15	-0.34	0.46	0.45	0.28	0.02	0.42	0.29	0.75	0.35	0.17	0.42	0.81	0.33	0.17	0.51	0.38
C10	0.81	0.37	0.04	0.74	1.05	0.64	0.56	0.79	0.45	0.63	0.4	-0.2	0.59	1.02	0.62	0.4	0.74	0.44

C11	0.06	-0.8	-1.21	0.11	0.3	0.23	0.17	0.15	0.11	0.15	-0.28	-0.01	0.53	0.34	0.18	0.57	0.29	0.16
C12	0.41	0.13	0.17	0.42	0.46	0.65	0.35	0.44	0.16	-0.3	-0.31	0.02	0.81	0.4	0.29	-0.53	-0.59	0.2
C13	-0.22	-0.15	0.01	0.42	0.3	0.31	0.19	0.22	-0.02	-0.06	-0.43	-0.51	0.61	1.11	0.62	0.43	0.26	0.04
C14	0.38	0.24	0.14	0.8	0.9	0.78	0.55	0.63	0.29	0.3	0.21	0.04	0.54	1	0.54	0.52	0.57	0.22
C15	0.3	0.2	0.23	0.68	0.6	0.39	0.38	0.28	0.13	0.3	0.2	0.23	0.68	0.6	0.39	0.38	0.28	0.13
C16	0.73	0.58	0.31	0.64	0.63	0.51	0.5	0.5	0.4	0.73	0.58	0.31	0.64	0.63	0.51	0.5	0.5	0.4
C17	0.54	0.11	0.37	-1.25	-2.92	-1.69	0.02	0.14	0.3	0.03	0.21	0.17	0	0.3	0.03	0.04	0.1	0.05
C18	0.39	0.36	0.49	0.48	0.34	0.28	0.4	0.66	0.37	0.33	0.21	0.11	0.54	0.35	0.09	0.24	0.43	0.33
C19	0.33	0.13	0.04	0.04	-0.67	0.02	0.22	0.73	0.24	0.27	0.41	-0.32	0.14	0.2	0.27	0.3	0.52	0.29
C20	0.47	0.27	0.3	0.58	0.48	0.34	0.41	0.76	0.39	0.26	0.16	0.07	0.72	0.36	0.08	0.24	0.3	0.22
C21	0.28	-0.16	-1.15	-1.06	0.17	0.45	0.47	0.87	-0.61	0.45	0.33	0.16	-0.28	-0.08	0.37	0.47	0.3	0.51
C22	0.59	0.26	0.28	0.6	0.29	0.24	0.32	0.44	0.3	0.55	0.6	0.29	0.55	0.78	0.87	0.81	0.82	0.41
C23	0.22	0.24	0.11	0.5	0.29	0.06	0.12	-0.05	-0.22	0.44	-0.79	0.13	-0.11	0.31	0.23	0.17	0.48	0.29
C24	0.54	0.38	0.52	0.61	0.15	0.46	0.24	0.22	0.34	0.56	0.44	0.66	0.79	0.37	0.28	0.36	0.54	0.43
C25	0.45	0.33	0.16	-0.28	-0.08	0.37	0.47	0.3	0.51	0.31	0.02	0.08	0.34	0.25	0.19	0.02	0.47	0.15

C26	0.55	0.6	0.29	0.55	0.78	0.87	0.81	0.82	0.41	0.46	0.16	0.11	0.43	0.35	0.22	0.24	0.37	0.32
C27	0.7	0.23	-0.48	-0.16	0.58	-2.03	-1.36	-0.48	0.37	0.2	0.08	0.14	0.52	0.3	0.3	0.12	0.13	0.11
C28	0.75	0.49	0.21	0.62	0.71	0.73	0.42	0.55	0.46	0.37	-0.12	0.13	0.49	0.54	0.35	0.28	0.41	0.28
C29	0.51	0.09	0.09	0.5	0.74	0.61	0.05	-0.15	0.43	0.38	0.22	0.06	0.54	0.42	0.31	0.03	0.21	0.27
C30	0.48	0.09	0.06	0.71	0.87	0.78	0.39	0.28	0.58	0.61	0.33	0.48	0.72	0.7	0.45	0.43	0.19	0.35
C31	-0.97	-0.4	-2.4	-0.31	0.51	0.49	0.47	0.35	0.23	0.17	0.13	0.12	0.43	0.58	0.02	0.23	0.29	0.13
C32	0.7	0.31	0.04	0.53	1.03	0.79	0.61	0.69	0.44	0.48	0.34	0.4	1.17	1	0.8	0.68	0.67	0.47
C33	0.11	0.15	-0.2	0.22	0.67	0.34	0.32	0.37	0.08	0.33	0.29	0.73	0.53	0	0.09	0.22	0.48	0.3
C34	0.43	0.26	0.25	0.64	0.77	0.68	0.67	0.87	0.46	0.46	0.3	0.28	0.58	0.41	0.35	0.27	0.26	0.22
C35	0.27	0.34	0.23	0.09	0.4	0.14	-0.29	0.1	0.13	0.51	-0.01	-0.21	-0.62	-0.36	0.24	0.21	0.54	0.3
C36	0.4	0.3	0.1	0.34	0.39	0.2	0.27	0.48	0.38	0.9	0.7	0.21	0.44	0.61	0.64	0.39	0.52	0.28
C37	0.11	0.27	0.2	0.28	0.13	0.27	0.22	0.64	0.31	-1	-0.34	-2.84	-1.51	-0.03	-0.64	0.24	0.36	0.03
C38	0.51	0.26	0.17	0.99	1.12	0.5	0.33	0.23	0.38	0.29	0.18	0.22	0.71	0.38	0.49	0.19	0.25	0.22
C39	0.04	-0.27	-0.5	0.24	-0.35	-1.01	0.17	0.38	0.32	0.29	0.15	-0.68	0.09	0.06	0.08	0.16	0.31	0.24
C40	0.41	0.74	0.54	0.79	0.68	0.34	0.38	0.43	0.26	0.35	0.02	-0.1	0.48	0.6	0.44	0.4	0.41	0.32

C41	-2.06	-1.39	-2.7	0	0.31	0.6	-1.02	-0.25	-0.58	0.11	0.27	0.2	0.28	0.13	0.27	0.22	0.64	0.31
C42	-1.55	-2.61	0.16	0.46	-0.25	-0.45	0.23	0.43	-1.18	0.51	0.26	0.17	0.99	1.12	0.5	0.33	0.23	0.38
C43	0.05	-0.32	-0.23	0.03	0.21	0.1	0.48	0.35	0.12	0.35	-0.16	-0.17	-0.05	-0.11	-0.15	-0.06	0.2	0.04
C44	0.24	0.22	0.41	0.57	0.27	0.19	0.26	0.43	0.2	0.42	0.18	0.22	0.36	0.38	0.41	0.18	0.39	0.3
C45	0.45	0.25	0.33	0.06	0.03	0	0.15	0.54	0.14	0.01	0.14	-0.64	0.27	0.47	-0.22	0.11	0.3	0.16
C46	0.7	0.38	0.18	0.55	0.52	0.51	0.37	0.69	0.52	0.26	0.16	0.28	0.66	0.7	0.36	0.15	0.42	0.24
C47	0.34	0.04	-1.37	0.07	0.82	0.53	0.15	0.47	0.32	0.17	-0.6	-1.23	-0.71	-0.59	0.08	0.45	0.48	0.26
C48	0.52	0.28	0.09	0.71	0.72	0.4	0.35	0.61	0.48	0.49	0.15	0.06	0.7	0.61	0.48	0.34	0.49	0.34
C49	0.38	-0.14	-0.37	0.12	0.48	0.31	0.11	0.18	0.27	-0.22	-0.49	-0.05	0.1	0.07	0.12	0.13	0.43	0.37
C50	0.52	0.37	0.31	0.56	0.81	0.81	0.29	0.48	0.49	0.3	0.35	0.31	0.83	0.61	0.49	0.49	0.42	0.33
C51	0.35	0.12	0.25	0.5	0.53	0.5	0.39	0.67	0.09	0.28	0.14	0.22	0.29	0.02	0.01	-0.31	0.43	0.29
C52	0.69	0.4	0.52	0.92	0.81	0.66	0.46	0.67	0.37	0.04	0.04	0.43	0.56	0.59	0.65	0.41	0.55	0.33
C53	0.38	0.08	0.16	0.31	0.31	0.18	0.12	0.31	0.25	0.5	0.01	0.11	0.6	0.46	0.52	0.08	0.33	0.2
C54	0.63	0.33	0.42	0.44	0.5	0.66	0.5	0.48	0.37	0.48	0.24	0.45	0.69	0.56	0.45	0.31	0.52	0.31
C55	-0.5	0.25	0.35	0.36	0.14	0.2	0.33	0.63	0.39	0.41	0.26	0.22	0.68	0.44	0.09	0	0.27	0.17

C56	0.54	0.45	0.44	0.44	0.33	0.07	0.09	0.44	0.43	0.51	0.3	0.36	0.77	0.6	0.64	0.45	0.5	0.47
C57	0.19	0.36	-1.49	0.11	-0.09	-0.66	0.16	0.47	0.27	0.47	0.04	0.11	0.25	0.5	0.05	0.33	0.31	0.24
C58	0.48	0.35	-0.27	0.68	0.39	0.6	0.57	0.63	0.39	0.45	0.36	0.33	0.54	0.74	0.7	0.55	0.62	0.38
C59	0.55	0.27	0.12	0.41	0.26	0.6	0.51	0.12	0.23	0.06	-0.06	-0.7	0.1	-0.23	-0.23	0.25	0.09	0.02
C60	0.36	0.11	0.2	0.71	1.01	0.63	0.55	0.43	0.33	-0.37	-0.75	-0.91	0.43	0.82	0.44	0.28	0.37	0.04
C61	-0.41	-0.34	0.06	0.63	1.02	0.84	0.5	0.26	0.08	-1.07	0	-0.85	0.46	0.68	0.29	0.38	0.23	-0.24
C62	0.33	0.3	0.4	0.75	0.49	0.69	0.41	0.44	0.25	0.18	0.16	0.22	0.3	0.79	0.83	0.9	0.77	0.09
C63	-0.24	-0.56	0.2	0.52	0.34	0.13	0.22	0.36	0.17	0.43	0.15	0.3	0.15	0.24	0.22	0.26	0.22	0.14
C64	0.63	0.25	0.26	0.72	0.48	0.32	0.29	0.48	0.37	0.64	0.36	0.1	0.54	0.44	0.35	0.3	0.43	0.44
C65	0.21	-0.79	0.01	0.36	0.36	0.16	0.08	0.56	0.26	0.23	0	-0.92	-0.24	-0.01	-0.66	-0.15	0.47	0.01
C66	0.6	0.31	0.14	0.52	0.1	0.14	0.37	0.68	0.37	0.52	0.31	0.78	0.67	-0.07	-0.19	0.45	0.55	0.42
C67	0.35	0.37	0.39	0.43	0.3	0.19	0.27	0.19	0.21	0.17	0.18	0.2	0.45	0.23	0.26	0.1	0.12	0.1
C68	0.48	0.4	0.27	0.65	0.6	0.43	0.35	0.2	0.31	0.37	0.18	0.06	0.69	0.97	0.56	0.4	0.48	0.3
C69	0.13	0.03	0.23	0.86	0.19	-0.33	-0.3	0.05	0.07	0	0.01	0.08	-0.55	-0.23	-0.15	0.04	-0.4	-0.47
C70	0.17	0.16	0.28	0.8	0.22	0.05	0.05	0.02	0.19	0.38	0.38	0.18	0.76	0.57	0.29	0.29	0.25	0.24

C71	0.56	0.28	0.32	0.09	-0.06	0.14	0.32	0.68	0.52	0.23	-0.35	-0.48	0.13	1	0.78	0.45	0.27	0.29
C72	0.25	0.39	0.64	0.66	0.82	0.3	0.37	0.79	0.29	0.38	0.39	0.26	0.42	0.4	0.23	-0.1	0.33	0.55
C73	0.08	0.19	-0.72	-0.48	0.14	-0.18	0.29	0.25	0.13	0.07	0.13	-0.4	0.39	0.65	0.55	0.11	0.38	0.26
C74	0.12	0.08	0.09	0.29	0.23	0	0.18	0.11	-0.14	0.73	0.41	0.13	0.31	0.75	0.69	0.33	0.04	0.3
C75	0.33	0.03	0.14	0.54	0.7	0.68	0.15	0.47	0.18	-0.29	0.11	0	0.01	-0.29	-0.64	0.09	0.1	0.04
C76	0.26	0.17	0.17	0.78	0.86	0.4	0.41	0.45	0.21	0.16	0.09	0.31	0.45	0.04	0.2	0.31	0.24	0.17
C77	0.28	0.06	-1.15	0.2	0.87	1.02	0.4	0.89	0.29	0.14	-0.18	-0.14	0.3	0.55	0.25	0.06	0.16	0.17
C78	0.77	0.53	0.35	0.74	0.98	0.64	0.57	0.71	0.49	0.41	0.33	0.37	0.62	0.43	0.28	0.24	0.5	0.3
C79	0.07	-0.77	-0.36	0.09	0.3	0.68	0.41	0.13	0.15	0.16	0	0.02	0.32	0.6	0.45	0.32	0.14	0.23
C80	0.42	0.35	0.15	0.36	0.76	0.58	0.4	0.31	0.38	0.77	0.39	0.62	0.72	0.29	0.2	0.4	0.59	0.33
C81	0.21	0.21	0.36	0.1	-1.27	-1.57	0.02	-0.21	0.04	0.06	-0.03	-0.51	0.08	0.41	0.34	0	0.08	0.11
C82	0.13	0.22	0.22	0.55	0.43	0.18	0.17	0.16	0.13	0.29	0.2	0.28	0.37	0.31	0.31	0.32	0.35	0.35
C83	0.21	-0.07	0.22	0.14	-0.45	-0.62	-0.39	0.07	0.3	0.04	-2.75	-0.76	0.37	0.57	-1.67	-0.79	0.65	0.04
C84	0.69	0.32	0.35	0.52	0.53	0.67	0.43	0.43	0.46	0.63	0.39	0.37	0.49	0.43	0.28	0.24	0.74	0.31
C85	0.31	-0.26	-0.36	0.08	0.35	0.43	0.41	0.53	0.39	0.26	0.26	0.07	0.16	0.34	0.27	0.31	0.1	0.02

C86	0.73	0.35	0.47	0.68	0.82	0.5	0.48	0.74	0.59	0.05	-0.36	0.07	0.42	0.39	0.54	0.26	0.1	0.08
C87	0.2	0.11	-0.19	0.35	0.14	-0.83	0.03	0.3	0.12	0.16	-0.57	-0.1	0.34	0.15	-0.16	-0.44	0.22	0.15
C88	0.33	0.16	0.06	0.56	0.58	0.16	0.4	0.46	0.35	0.39	0.2	0.31	0.71	0.46	0.17	0.14	0.17	0.26
C89	0.43	0.23	0.13	0.29	0.15	0.29	0.03	0.13	0.43	0.42	-0.15	0.19	0.39	0.28	0.28	0.14	0.15	0.29
C90	0.64	0.35	0.38	0.58	0.53	0.48	0.41	0.64	0.44	0.61	0.26	0.21	0.61	1	0.53	0.51	0.35	0.39
C91	0.11	0.14	0.19	0.39	-0.26	-0.31	-0.17	0.14	0.14	0.31	0	-0.23	-0.76	-0.51	-0.41	0.28	0.53	0.44
C92	0.38	0.19	0.18	0.8	0.79	0.39	0.23	0.2	0.33	0.4	0.39	0.43	0.55	0.36	0.13	0.5	0.62	0.46
C93	0.39	-0.02	0.04	0.05	0.53	0.9	0.45	0.55	0.28	0.74	0.23	0.14	0.61	0.26	0.1	0.32	0.42	0.43
C94	0.33	0.35	0.2	0.63	0.75	0.61	0.35	0.57	0.27	0.68	0.82	0.46	0.71	0.94	0.51	0.3	0.65	0.36
C95	0.55	0.14	0.28	0.59	0.47	0.3	0.32	0.81	0.45	0.28	0.08	-0.82	0.2	0.59	0.24	0.26	0.42	0.15
C96	1.02	0.82	0.85	0.94	0.25	0.16	0.41	0.84	0.57	0.57	0.31	0.2	0.54	0.85	0.62	0.44	0.25	0.35
C97	0.41	0.25	0.46	0.53	0.44	0.33	-0.05	0.03	0.29	-2.1	-1.12	-1.63	0.41	0.56	0.32	0.19	-0.4	-0.71
C98	0.72	0.74	0.66	0.56	0.65	0.62	0.33	0.56	0.45	0.35	0.13	0.36	0.55	0.27	0.35	0.26	0.51	0.38
C99	0.34	0.3	-0.01	0.44	0.32	0.17	0.29	0.33	0.29	0.15	0.01	0	0.12	0.23	-0.04	0.16	-0.52	0.26
C1	0.45	0.46	0.43	0.7	0.72	0.64	0.39	0.13	0.28	0.36	0.25	0.13	0.92	0.53	0.07	0.15	0.1	0.32

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1.4 EPI DATA FOR THE LITTLE FINGER BEFORE AND AFTER THE MEDITATION

Name	Left part of heart_Pre	Left kidney_Pre	Mammary glands, Respiratory system_Pre	Jejunum_Pre	Right part of heart_Pre	Coronary vessels_Pre	Duodenum_Pre	Ileum_Pre	Right kidney_Pre	Heart_Pre	Left part of heart_Post	Left kidney_Post	Mammary glands, Respiratory system_Post	Jejunum_Post	Right part of heart_Post	Coronary vessels_Post	Duodenum_Post	Ileum_Post
C1	0.19	0.11	0.51	0.5	0.03	0.17	0.16	0.5	0.11	0.19	0.17	0.26	0.28	0.33	0.41	0.22	-0.24	0.07
C2	-0.23	-0.24	0.68	0.84	0.45	0.18	0.4	0.59	0.37	0.32	0.33	0.25	0.56	0.46	0.43	0.27	0.31	0.41
C3	0.29	0.28	0.61	0.31	0.04	0.18	-0.35	0.15	0.03	0.16	0.4	0.1	0.39	0.34	-0.01	0.12	-0.39	0.17
C4	0.41	0.47	0.45	0.27	-0.26	-0.01	0.06	0.47	0.17	0.36	0.28	0.33	0.61	0.54	0.19	-0.21	0.28	0.25
C5	0.17	0.17	0.53	0.24	-0.24	0.14	0.21	0.16	0.24	0.22	0.22	0.04	0.12	0.09	0.02	0.1	-0.9	0.02
C6	0.48	0.11	0.27	0.28	0.26	0.29	0.31	0.15	0.27	0.43	0.28	0.11	0.64	0.29	0.25	0.26	0.1	0.33
C7	-0.4	-0.25	0.06	0.32	0.22	0.05	0.13	0.36	0.03	0.07	0.05	0.12	0.13	0.17	0.06	0.09	-0.1	0.15

C8	0.15	0.16	0.36	0.63	0.61	0.3	0.32	0.34	0.38	0.42	0.26	0.3	0.36	0.31	0.57	0.37	0.13	0.32
C9	0.34	0.05	0.21	-0.53	0.18	0.31	0.18	0.01	0.01	0.04	0.3	0.07	0.39	0.29	0.3	0.31	0.18	0.09
C10	0.15	-0.5	0.53	0.15	0.25	0.13	0.36	0.21	0.34	0.38	0.55	0.3	0.51	0.33	0.51	0.37	0.35	0.26
C11	-0.09	-0.07	0.15	0.02	-0.37	0.08	-0.25	0.08	-0.02	0.12	-0.75	0.01	0.75	0.01	0.01	0.15	0.07	0.13
C12	0.21	0.11	0.19	0.25	0.28	0.26	0.11	0.16	0.16	0.18	0.24	-0.46	0.35	-0.42	-0.46	0.46	-0.13	0.1
C13	0.06	0.17	0.17	-0.13	0.11	0.04	-0.15	0.11	0.01	0.11	-0.64	-0.68	0.36	0.32	0.1	0.01	0.12	0.34
C14	0.28	0.16	0.48	0.38	0.37	0.19	0.11	0.13	0.24	0.34	-0.14	0.09	0.44	0.34	0.03	-0.32	-0.01	0.15
C15	0.18	0.1	0.29	0.19	0.17	0.22	0.23	0.32	0.21	0.28	0.18	0.1	0.29	0.19	0.17	0.22	0.23	0.32
C16	0.48	0.31	0.62	0.44	0.26	0.3	0.11	0.34	0.24	0.27	0.48	0.31	0.62	0.44	0.26	0.3	0.11	0.34
C17	0.06	-1.2	-0.86	0.18	0.43	0.03	0	0.61	0.19	0.49	0.12	-0.48	-0.11	0.4	0.08	-0.13	-0.22	-1.26
C18	0.16	0.49	0.55	0.33	0.55	0.34	0.28	0.72	0.47	0.71	0.18	0.15	0.42	0.08	0.23	0.14	0.08	0.08
C19	0.04	0.23	0.87	0.09	0.42	0.21	0.2	0.23	0.12	0.34	0.02	0	0.54	-0.24	0	0.12	-0.92	-0.43
C20	0.33	0.46	0.72	0.25	0.32	0.28	0.37	0.25	0.43	0.59	0.22	0.12	0.56	0.38	0.09	0.17	-0.02	0.2
C21	-0.21	-0.1	0.08	0.04	0.11	-0.41	-0.04	0.19	0.05	0.21	0.14	-0.23	0.14	0.2	0.39	0.28	0.06	-0.26
C22	0.29	0.15	0.6	0.34	0.17	0.26	0.15	0.28	0.27	0.3	0.44	0.09	0.53	0.45	0.44	0.35	0.49	0.44
C23	-0.14	-0.46	0.61	0	0	0.27	-0.04	0.37	-0.44	-0.29	0.04	0.25	0.46	0.04	0.07	0.09	0.15	0.32

C24	-0.13	0.09	0.74	0.04	-0.12	0.23	0.24	0.27	0.19	0.17	0.11	0.9	0.76	0.32	0.5	0.3	0.08	0.53
C25	0.14	-0.23	0.14	0.2	0.39	0.28	0.06	-0.26	0.44	0.31	0.14	0.12	0.41	0.11	0.32	0.19	-0.01	0.39
C26	0.44	0.09	0.53	0.45	0.44	0.35	0.49	0.44	0.71	0.34	0.36	0.27	0.55	0.11	0.1	0.14	0.27	0.25
C27	0.16	0.3	-0.64	-1	0.17	0.29	0.25	0.49	0.09	-0.15	0.29	0.29	0.62	0.18	0.33	0.3	0.06	0.33
C28	0.37	0.26	0.62	0.61	0.35	0.58	0.29	0.51	0.39	0.67	0.31	0.32	0.79	0.21	0.23	0.25	0.04	0.09
C29	0.51	0.32	0.57	0.44	0.06	0.29	-0.1	0.07	0.38	0.38	0.16	0.18	0.51	0.62	-0.06	0.33	-0.05	0.14
C30	0.16	0.54	1.14	0.64	0.34	0.09	0.25	0.7	0.13	0.28	0.35	0.22	0.98	1.02	0.19	0.23	0.51	0.73
C31	0.1	-0.65	0.55	0.23	0.1	0.14	-0.18	-0.28	-0.2	0.41	0.12	-0.06	0.34	0.37	0.24	0.31	0.19	0.12
C32	0.45	0.31	0.77	0.42	0.23	0.21	0.41	0.19	0.41	0.48	0.37	0.21	0.78	0.97	0.67	0.39	0.49	0.59
C33	0.03	-0.61	0.43	0.26	0.21	0.17	-0.01	0.2	0.26	0.29	-0.3	0.24	0.46	0.18	0.47	0.19	0.11	0.03
C34	0.31	0.3	0.88	0.54	0.49	0.21	0.19	0.6	0.23	0.45	0.04	0.05	0.51	0.22	0.31	0.09	0.07	0.19
C35	0.19	0.03	0.32	0.3	0.12	0.21	-0.22	-0.17	-0.15	0.08	0.19	0.26	0.49	0.19	0.03	0.15	0.07	-0.38
C36	0.2	-0.09	0.35	0.19	0.15	0.22	0.29	0.35	0.17	0.34	0.53	0.29	0.54	0.28	0.22	0.13	0.28	0.23
C37	0.38	0.07	0.42	0.42	0.16	0.4	0.46	0.33	0.41	0.32	-0.49	0.09	0.29	0.2	-0.2	-0.53	0.32	0.19
C38	0.34	-0.09	0.71	0.61	0.43	0.23	0.3	0.69	0.39	0.48	0.18	-0.18	0.34	0.54	0.22	0.3	0.05	0.26

C39	0.28	0.07	0.38	-0.41	0.07	0.32	0.19	0.17	0.34	0.28	0.25	0.02	0.7	0.36	-0.05	0.18	0.06	0.17
C40	0.24	0.24	0.58	0.41	0.3	0.55	0.31	0.47	0.22	0.23	0.36	0.13	0.54	0.47	0.42	0.18	0.44	0.66
C41	-0.83	0.21	0.16	-2.56	-2.7	-1.81	-1.08	-0.54	-0.4	-0.71	0.38	0.07	0.42	0.42	0.16	0.4	0.46	0.33
C42	-1.21	0.34	0.16	0.03	0.16	0.14	-0.38	0.4	-0.53	0.08	0.34	-0.09	0.71	0.61	0.43	0.23	0.3	0.69
C43	0.12	0.2	0.17	0.19	0.26	0.17	0.06	0.15	0.15	0.41	0.02	-0.16	0.13	-0.55	-0.04	-0.27	-0.57	0.06
C44	0.14	0.25	0.48	-0.12	-0.33	0.03	0.23	0.38	0.23	0.49	0.18	0.14	0.57	-0.32	-0.2	0.09	-0.09	0.1
C45	0.09	0.13	-0.22	-0.42	0.2	0.12	-0.48	0.03	0.08	0.37	0.09	-0.23	0.19	0	-0.32	-0.07	0.02	0.17
C46	0.38	0.45	0.51	0.26	0.46	0.28	0.36	0.38	0.38	0.32	0.27	0.01	0.5	0.26	0.15	0.18	0.08	0.13
C47	0.37	-0.12	0.4	0.25	0.22	0.22	-0.17	0.25	0.02	0.32	0.19	0.16	-0.04	0.1	0.21	0.26	0.08	0.16
C48	0.37	0.13	0.55	0.15	0.3	0.31	0.22	0.21	0.24	0.3	0.22	0.11	0.65	0.46	0.22	0.3	0.29	0.53
C49	0.33	-0.3	0.24	0.27	0.03	0.22	-0.4	0.3	0.06	0.34	-0.31	0.4	0.22	0.06	0.25	0.18	-1.38	0.15
C50	0.35	0.31	0.74	0.69	0.27	0.3	0.07	0.53	0.16	0.39	0.66	0.31	0.49	0.3	0.16	0.27	-0.08	0.37
C51	0.21	0.4	0.63	0.22	0.29	0.14	0.25	0.45	0.13	0.27	0.25	0.09	0.39	0.4	0.41	0.27	-0.08	0.4
C52	0.46	1	0.91	0.33	0.64	0.35	0.08	0.66	0.73	0.64	-0.06	0.07	0.85	0.64	0.36	0.31	0.21	0.75
C53	0.36	0.45	0.3	0.24	0.12	0.23	0.07	0.01	0.16	0.2	0.27	0.07	0.63	0.6	0.16	0.25	-0.6	0.23

C54	0.3	0.6	0.46	0.55	0.59	0.49	0.28	0.68	0.53	0.42	0.43	0.53	0.81	0.39	0.45	0.32	0.38	0.59
C55	-0.85	0.45	0.57	0.4	0.71	0.22	-0.14	0.5	0.2	0.33	0.36	0.17	0.5	0.24	0.32	0.14	0.03	0.28
C56	0.27	0.59	0.43	0.34	0.26	0.15	0.32	0.65	0.27	0.36	0.21	0.28	0.87	0.66	0.32	0.26	0.45	0.65
C57	0.33	0.07	0.05	0.13	0.1	0.15	0.14	-0.04	0.09	0.14	0.12	0.2	0.36	0.27	-0.17	0.18	0.22	0.34
C58	0.11	-0.02	0.53	0.2	0.35	0.02	0.35	0.11	0.37	0.17	0.51	0.69	0.66	0.23	-0.28	0.26	0.35	0.84
C59	0.14	-0.52	0.2	0.71	0.17	0.33	-0.62	0.33	0.05	0.19	-0.77	-0.85	0.01	0.04	-0.09	-0.45	-0.28	0.09
C60	0.31	0.31	0.65	0.58	0.02	0.24	0.21	0.65	0.17	0.29	-0.54	-0.41	0.05	-0.68	-0.53	0.08	0	0.4
C61	0.3	0.23	0.15	0.48	0.06	0.17	0.34	0.54	0.07	0.32	0.16	0.46	0.39	0.6	0.2	0.13	-0.16	0.09
C62	0.54	0.43	0.44	0.69	0.24	0.24	0.41	0.7	0.44	0.38	0.35	0.43	0.64	0.4	0.21	0.14	0.22	0.59
C63	0.07	0.17	0.51	0.11	0.45	0.26	-0.14	0.42	0.18	0.49	0.14	0.14	0.57	0.07	0.15	-0.21	0.1	0.36
C64	0.14	0.13	0.74	0.53	0.14	0.15	0.09	0.64	0.17	0.49	0.33	0.21	0.56	0.37	0.35	0.2	0.17	0.64
C65	0.19	-0.17	0.43	0.12	0.18	0.22	0.11	0.58	-0.03	0.31	0.21	0.21	0.39	0.12	0.11	0.18	-0.48	0.22
C66	0.34	0.38	0.78	0.39	0.61	0.38	0.27	0.82	0.2	0.4	0.37	0.36	0.87	0.2	0.34	0.19	0.33	0.61
C67	0.02	0.04	0.59	0.42	-0.15	0.11	-0.17	-0.27	0.08	0.11	-0.04	-0.64	0.19	0.24	0.11	0.15	-0.16	-0.59
C68	0.57	0.06	0.74	0.57	0.09	0.3	0.15	0.36	0.17	0.22	0.17	-0.32	0.3	0.29	0.18	0.27	0.21	0.09

C69	-0.18	0.07	0.48	0.08	0.2	-0.09	0.02	-0.31	0.04	0.15	0.09	0.24	0.15	-0.64	-0.78	-0.45	-0.76	-0.87
C70	0.09	0.21	0.75	0.08	0.13	0.13	0.09	0.46	0.22	0.24	0.27	0.35	0.79	0.5	0.25	0.3	0.09	0.25
C71	0.03	0.39	0.52	0.35	0.5	0.27	-0.15	0.69	0.34	0.35	0.21	0.16	0.54	0.46	0.21	0.05	-0.03	0.55
C72	0.19	0.48	0.64	0.54	0.46	0.34	0.22	0.64	0.41	0.49	0.49	0.36	0.74	0.51	0.37	0.4	0.6	0.23
C73	-0.27	-0.86	-0.56	0.06	0	0.15	-0.47	-0.62	0.02	0.04	0.29	0.23	0.09	0.12	0.11	0.28	-0.64	0.39
C74	0.1	0.13	0.25	0.22	0.32	0.16	0.28	0.14	0.33	0.21	0.26	0.15	0.58	0.38	-0.4	0.09	-0.3	0.48
C75	0.03	0.18	0.26	0.08	0.61	0.23	0.14	-0.21	0.47	0.19	-0.2	-0.23	0.04	-0.43	0.1	-0.01	-0.57	0.08
C76	0.25	0.63	0.58	0.27	0.42	0.2	0.27	0.03	0.59	0.48	0.12	0.05	0.38	0.13	0.05	0.09	0.27	0.22
C77	0.43	0.31	0.7	0.31	0.46	0.38	0.12	0.47	0.13	0.48	-0.58	0.09	0.3	0.1	0.37	0.11	0.08	0.02
C78	0.52	0.44	0.65	0.37	0.51	0.52	0.25	0.42	0.39	0.53	0.24	0.41	0.77	0.55	0.44	0.54	0.13	-0.15
C79	0.24	0.11	0.26	0.39	0.03	0.09	0.23	0.33	-0.28	0.07	0.19	0.27	0.26	0.15	0.17	0.27	0.24	0.65
C80	0.26	0.06	0.34	0.59	0.35	0.3	0.29	0.52	0.27	0.26	0.54	0.4	0.61	0.53	0.31	0.36	0.37	0.8
C81	0.22	0.18	-0.19	0.02	-0.69	-0.04	-1.1	-0.79	0.34	0.19	0.04	0.09	0.02	0	0.04	0.08	-0.05	0.08
C82	0.23	0.2	0.44	0.23	0.05	0.01	-0.18	0.19	0.22	0.28	0.09	0.14	0.33	0.37	0.25	0.18	0.12	0.25
C83	0.09	0.27	0.52	0.28	0.04	-0.2	0.01	0.09	0.25	0.15	-1.36	-0.09	0.36	0.15	0.31	-0.09	-0.54	0.1

C84	0.42	0.36	0.76	0.33	0.12	0.37	0.25	0.34	0.35	0.37	0.35	0.53	0.61	0.3	0.58	0.18	0.09	1.02
C85	0.32	0.05	0.3	0.42	-0.04	0.24	0.49	0.3	0.26	0.36	0.11	-0.53	0.17	0.06	0.03	0.05	0.15	0.39
C86	0.6	0.58	0.7	0.68	0.32	0.37	0.39	0.59	0.51	0.41	0.23	0.19	0.3	0.51	0.27	0.26	0.23	0.66
C87	0.15	0.01	0.43	0.04	-0.18	-0.02	-0.1	-0.36	-0.35	-0.52	0.01	-0.23	0.36	-0.08	-0.08	0.12	-0.11	-0.28
C88	0.18	0.22	0.54	0.36	0.2	0.15	0.24	0.68	0.09	0.4	0.23	0.34	0.36	0.27	0.36	0.32	0.22	0.18
C89	0.28	0.21	0.49	0.3	0.18	0.07	-0.22	0.25	0.01	0.05	0.18	-0.04	0.35	0.48	0.04	0.13	0	0.11
C90	0.15	0.23	0.57	0.47	0.32	0.28	0.3	0.48	0.21	0.23	0.36	0.18	0.56	0.4	0.24	0.26	0.4	0.43
C91	0.04	-0.53	0.16	-0.51	-0.74	0.1	-0.7	-0.14	-0.16	0.07	0.27	-0.18	0.36	0.43	0.18	0.57	0.01	0.29
C92	0.24	0.04	0.5	0.45	0.09	0.18	0.03	0.27	0.12	0.25	0.33	0.19	0.35	0.21	0.48	0.58	0.28	0.45
C93	0.21	0.31	0.35	0.37	0.19	0.26	0.09	0.42	-0.15	0.01	0.32	0.09	0.55	0.54	0.29	0.18	0.08	0.06
C94	0.25	0.48	0.6	0.44	0.36	0.38	0.4	0.72	0.29	0.39	0.55	0.25	0.71	0.36	0.63	0.35	0.36	0.66
C95	0.36	0.3	0.68	0.31	0.27	0.27	0.15	-0.16	0.29	0.53	-0.1	-0.04	0.2	0.37	0.24	0.27	0.06	0.08
C96	0.67	0.38	0.89	0.48	0.58	0.57	0.33	0.54	0.36	0.86	0.34	0.27	0.48	0.49	0.42	0.26	0.4	0.25
C97	0.29	0.12	0.27	0.48	0.08	0.22	-0.71	0.52	0.31	0.31	-1.25	-0.4	0.26	0.08	-0.76	-1.23	-0.39	0.17
C98	0.55	0.42	0.64	0.61	0.17	0.17	0.06	0.86	0.62	0.6	0.14	0.15	0.7	0.21	0.18	0.25	-0.09	0.04

C99	0.04	0.07	0.43	0.18	0.07	0.14	0.21	0.23	0.24	0.21	-0.27	-0.38	0.73	0	-0.19	-0.07	-0.88	-0.32
C100	0.26	0.58	0.65	0.51	0.25	0.22	0.38	0.59	0.46	0.54	0.1	0.6	0.45	0.07	0.29	0.17	0.45	0.48

APPENDIX V

EPI DATA PRANA MUDRA PRACTICE

1.0 PRANA MUDRA PRACTICE FIRST DAY- 10 MINUTE

Name	Area_Pre	Area normalized_Pre	Average intensity_Pre	Entropy_Pre		Area Post	Area normalized Post	Average intensity Post	Entropy Post
B1	9006.1	3.00433	96.6313	2.01741		9972.6	3.40016	101.205	2.01711
B2	9385.2	3.10282	95.8889	2.09834		8897	3.16439	94.8466	2.04481
B3	8850.1	2.05522	86.6218	2.10689		8863.9	2.65898	88.4417	2.09695
B4	10234.4	3.84407	102.459	2.02216		10110.6	3.89015	102.717	2.05259
B5	9458.3	3.42975	94.7786	2.08948		7272	3.62226	85.0946	2.05799
B6	9526.5	1.93085	88.5582	1.82925		8757.8	1.70848	81.6777	2.10568
B7	10364.2	3.58989	100.759	2.01102		10594.1	2.74062	98.5559	1.99415
B8	10705.2	2.87191	93.3938	2.02383		10084	2.59702	89.1774	2.05826
B9	10451	3.49622	100.751	1.95798		9821.5	3.92357	100.946	2.029
B10	11265.5	4.32648	106.894	2.03712		10935.7	3.98293	103.914	2.04512
B11	9971.1	3.18327	92.2594	2.0301		8875.3	4.66345	89.5195	2.03486
B12	10573.4	4.78264	105.154	1.96203		9317.8	3.98553	95.3717	2.03604
B13	10176.4	2.77885	98.6297	1.97591		9811.4	2.48296	91.52	2.0501
B14	9584.6	2.56686	93.8773	2.03347		9415.1	3.19402	95.292	2.04664
B15	7618.6	2.84113	85.5824	2.04454		7990.4	2.39346	83.2766	2.11086
B16	8746.6	1.94592	86.2595	2.06974		9249	2.05421	87.8733	2.10965
B17	10356.7	2.37173	89.4137	1.9194		9231.9	1.61056	80.127	2.07901
B18	10210.2	4.64504	103.635	2.02575		7965.2	2.62728	86.4256	2.09823

1.1 PRANA MUDRA PRACTICE SECOND DAY- 15 MINUTES

Name	Area_Pre	Area normalized_Pre	Average intensity_Pre	Entropy_Pre		Area_Post	Area normalized_Post	Average intensity_Post	Entropy_Post
B1	9792.9	3.53601	99.7638	1.95759		10697.5	5.21983	106.111	1.99175
B2	11214.2	4.30555	104.718	2.03809		10917.2	3.83795	103.974	2.05929
B3	10263.6	2.50543	96.9426	2.00794		10574.1	3.10146	95.1389	2.02593
B4	11655.5	3.61359	101.833	1.97235		9939.4	3.51793	97.3274	1.98714
B5	10659.6	2.92707	99.0525	2.05991		11211.7	3.2913	101.383	2.03682
B6	10364.7	2.51302	96.2771	1.96144		10231.6	2.72587	96.3102	2.00291
B7	11433.3	3.30332	99.2353	2.0458		10498.1	2.74187	95.4606	1.92176
B8	11785.6	3.09119	99.502	1.96621		11504.9	3.35166	100.929	1.99239
B9	10343.4	2.67647	95.0641	2.03654		9030.9	2.10787	89.762	1.97175
B10	10287	3.71326	103.594	2.01269		12040.3	4.52956	106.633	2.02937
B11	11776.8	4.38852	108.988	1.95974		11109	3.58461	102.197	1.99084
B12	10563.2	4.30246	103.86	2.08015		9853.2	4.45421	97.5828	2.04237
B13	8597.4	2.45654	90.8588	2.06966		11366.2	3.20932	102.731	1.98589
B14	11370.4	3.32682	101.643	1.98022		11908.2	3.45236	102.607	1.98049
B15	8564.9	2.85872	94.2741	1.94066		11205.6	4.42853	102.916	2.03793
B16	11295.9	2.31873	96.544	1.97068		9182.8	2.07351	89.3293	2.03698
B17	8830.8	2.11138	88.0197	2.06689		11371.9	3.00678	96.76	2.01533
B18	11113	4.52191	105.708	2.03798		9911	3.11086	93.7695	2.08026

1.2 PRANA MUDRA PRACTICE THIRD DAY- 20 MINUTES

Name	Area_Pre	Area normalized_Pre	Average intensity_Pre	Entropy_Pre		Area_Post	Area normalized_Post	Average intensity_Post	Entropy_Post
B1	9792.9	3.53601	99.7638	1.95759		10697.5	5.21983	106.111	1.99175
B2	11214.2	4.30555	104.718	2.03809		10917.2	3.83795	103.974	2.05929
B3	10263.6	2.50543	96.9426	2.00794		10574.1	3.10146	95.1389	2.02593
B4	11655.5	3.61359	101.833	1.97235		9939.4	3.51793	97.3274	1.98714
B5	10659.6	2.92707	99.0525	2.05991		11211.7	3.2913	101.383	2.03682
B6	10364.7	2.51302	96.2771	1.96144		10231.6	2.72587	96.3102	2.00291
B7	11433.3	3.30332	99.2353	2.0458		10498.1	2.74187	95.4606	1.92176
B8	11785.6	3.09119	99.502	1.96621		11504.9	3.35166	100.929	1.99239
B9	10343.4	2.67647	95.0641	2.03654		9030.9	2.10787	89.762	1.97175
B10	10287	3.71326	103.594	2.01269		12040.3	4.52956	106.633	2.02937
B11	11776.8	4.38852	108.988	1.95974		11109	3.58461	102.197	1.99084
B12	10563.2	4.30246	103.86	2.08015		9853.2	4.45421	97.5828	2.04237
B13	8597.4	2.45654	90.8588	2.06966		11366.2	3.20932	102.731	1.98589
B14	11370.4	3.32682	101.643	1.98022		11908.2	3.45236	102.607	1.98049
B15	8564.9	2.85872	94.2741	1.94066		11205.6	4.42853	102.916	2.03793
B16	11295.9	2.31873	96.544	1.97068		9182.8	2.07351	89.3293	2.03698
B17	8830.8	2.11138	88.0197	2.06689		11371.9	3.00678	96.76	2.01533
B18	11113	4.52191	105.708	2.03798		9911	3.11086	93.7695	2.08026

1.3 PRANA MUDRA PRACTICE WITH CONTROL

ID	Gender	Area_pre	Norm. Area_Pre	Ave. Inten._Pre	Entropy_pre	Area_post	Norm. Area_Post	Ave. Inten_Post	Entropy_post	Group
s1	F	9715.7	1.75	76.1	2.02	10338.4	1.87	76.44	1.98	Mudra
s2	F	10745.6	2.66	78.15	2.03	12256	2.46	83.72	1.96	Mudra
s3	F	10286.1	2.95	75.73	2.01	11565.3	2.06	77.35	1.97	Mudra
s4	F	10743	2.88	77.9	1.96	10522.9	2.75	79.12	2.04	Mudra
s5	F	9806.5	2.01	72.37	2.08	10590.4	1.66	71.96	1.94	Mudra
s6	F	10069.3	1.89	74.13	2.04	10771.9	2.09	73.16	2.06	Mudra
s7	F	11281.5	2.45	80.32	1.89	10984.3	2.54	82.48	1.99	Mudra
s8	M	9933.1	1.91	72.25	2	10622	2.18	74.34	1.97	Mudra
s9	M	8450.3	1.66	70.37	2.06	11535.1	1.65	73.92	1.89	Mudra
s10	F	7091.9	1.18	68.16	1.89	9135.7	1.88	73.45	1.96	Mudra
s11	F	8364.5	1.19	68.14	1.97	9869.4	1.42	71.16	2.06	Mudra
s12	M	10202.4	1.13	69.61	1.92	9583.3	1.03	65.59	2.01	Mudra
s13	M	11871.1	3.32	84.88	1.9	11580.6	3.59	83.37	2	Mudra
s14	M	11114.6	2.29	74.66	2.03	10587.3	1.47	70.84	2	Mudra
s15	M	8119	1.53	68.47	1.91	11097.8	1.91	72.98	1.99	Mudra
s16	M	12475.7	3.22	83.75	1.89	11869.9	3.57	85.06	1.88	Mudra
s17	M	5643.8	0.86	64.69	1.69	7998.4	1.38	68.66	1.89	Mudra
s18	M	10062.9	2.83	73.51	1.94	10999.2	3.41	81.37	1.94	Mudra
s19	M	12575.7	1.66	74.09	1.98	12996	1.87	79.44	1.96	Mudra
s20	M	10060.7	1.47	69.83	2.03	10175.2	1.45	71.43	2	Mudra

s21	M	11300.6	2.23	78.27	1.99	11588.3	2.29	79.74	2	Mudra
s22	M	12261.2	1.44	71.85	2	13361.3	1.57	77.5	2.01	Mudra
s23	M	11083.1	1.82	75.12	1.98	10448.3	1.94	75.74	1.98	Mudra
s24	M	10178.3	1.57	70.9	1.92	12174.5	1.96	74.93	1.97	Mudra
s25	M	6300.4	0.64	66.04	1.73	4912.1	0.46	63.8	1.4	Mudra
s26	M	11051.1	1.81	78.37	2.05	8750.4	1.59	70.84	2.05	Mudra
s27	M	10612.1	1.45	72.04	2.03	12323.3	2.1	76.23	2.02	Mudra
s28	M	6094.3	1.12	68.27	1.62	8738.8	1.65	69.39	1.88	Mudra
s29	F	8095.6	1.3	73.32	2.04	10651.9	1.58	72.93	1.99	Mudra
C1	F	7560.3	2.81	79.18	2.1	9936.8	3.96	87.09	1.96	Control
C2	M	9607.9	2.13	76.68	2.07	10118.7	3.1	82.3	2.01	Control
C3	M	9981.9	7.43	87.81	2.02	10348.1	6.49	93.11	2.01	Control
C4	M	11379.4	2.61	84.5	1.88	11042	2.46	83.36	1.89	Control
C5	F	10480.1	1.92	89.1	1.92	10251.9	1.85	82.6	1.95	Control
C6	M	12464.5	1.74	87.17	1.9	12251.1	1.7	86.57	1.93	Control
C7	M	12251.1	1.7	86.57	1.93	10958.2	2.39	89.71	2	Control
C8	M	8848.9	2.61	79.79	2.07	9829.8	3.01	81.29	2.04	Control
C9	F	9705.2	3.69	81.6	1.99	9993.8	2.76	84.03	1.99	Control
C10	M	9915.7	2.34	82.32	1.97	10111.3	2.76	82.77	1.96	Control
C11	M	6832	0.99	70.97	1.85	9918.4	1.37	72.99	2.1	Control
C12	M	11813.4	1.84	81.21	1.94	11705.5	2.03	84.36	2	Control
C13	M	9497.3	2.11	80.57	1.98	10911.8	2.51	84.75	1.96	Control
C14	M	9048.4	3.03	78.15	2.01	9908.9	2.72	81.23	2.02	Control

C15	M	10174	2.42	79.87	2.01	9964.2	2.42	79.47	2.03	Control
C16	M	8850.5	2.81	80.93	2.02	9053.9	2.91	83.09	1.97	Control
C17	M	9320.1	3.05	78.81	1.95	9080.7	3.43	79.75	1.99	Control
C18	M	10229.6	2.3	79.87	1.99	9657.7	2.92	81.08	2.09	Control
C19	M	11341.3	4.25	81.66	2.09	11587	5.96	86.17	2.04	Control
C20	M	11764	2.2	80.9	1.91	11171.6	2.57	79.02	1.91	Control
C21	M	7800.2	1.58	65.1	1.88	9212.4	1.76	66.87	1.98	Control
C22	M	11800.6	1.87	74.96	2.05	12001.3	2.2	76.92	2.06	Control
C23	M	10446.6	2.28	72.26	2.02	11202.3	2.84	76.01	1.92	Control
C24	F	9997.1	2.73	71.8	2.02	10017.8	2.8	71.17	1.94	Control
C25	F	10220.9	3.08	73.24	2	10757.7	1.97	79.11	1.93	Control
C26	F	10100.8	3.19	76.12	2.01	9684.8	2.83	72.09	2.01	Control
C27	F	9998.6	2.5	71.75	1.94	10866.9	2.11	79.09	1.97	Control
C28	F	10623.4	1.82	71.76	2	10757.7	1.97	79.11	1.93	Control
C29	F	11269.5	1.72	73.34	2.05	11433.1	1.9	73.8	2.05	Control
C30	F	12006.6	2.57	84.17	1.95	12255.1	3.03	85.93	2.02	Control
C31	F	10181.4	2.44	76.84	1.95	10613.2	2.11	79.07	1.89	Control
C32	F	10706.8	4.79	76.71	1.87	9982.8	4.47	72.87	2.03	Control

APPENDIX VI

ANALYSIS OF DIABETES

1.0 EPI DATA CORRESPONDING TO THE ENERGY IN ORGANS AND ORGAN SYSTEM FOR DIABETES

D or ND	Name	Gender	Eyes	Cerebral zone (cortex)	Cardiovascular system	Coronary vessels	Pancreas	Liver	Urinogenital system	Kidneys	Immune system
D	c1	M	3.49	2.92	4.08	4.53	4.96	6.64	6.15	5.48	3.01
D	c2	F	5.66	5.67	5.88	6.78	6.31	7.54	7.42	7.06	5.3
D	c3	M	3.64	3.62	4.7	4.07	3.55	5.16	2.95	4.7	3.71
D	c4	F	3.9	3.8	4.45	4.99	4.46	6.42	6.73	5.33	3.68
D	c5	F	4.79	5.51	5.8	5.69	7.28	8.92	7.15	7.26	4.7
D	c6	M	3.89	3.44	4.97	3.65	4.91	6.62	6.85	6.07	4.25
D	c7	M	4.06	4.26	4.5	3.85	4.08	5.98	6	5.8	3.14
D	c8	F	5.53	5.2	5.44	4.52	5.26	7.49	7.1	7.2	5.4
D	c9	M	3.98	4.53	4.22	5.08	4.25	7.44	6.72	6.06	3.68
D	c10	M	4.55	3.93	4.79	4.98	5.24	5.93	4.95	5.7	4.07
D	c11	F	4.37	4.61	5.16	5.12	4.54	7.48	4.64	6.24	3.48
D	c12	M	3.87	4.1	4.65	4.92	4.91	7.31	5.41	5.84	3.64
D	c13	F	4.08	4.59	4.28	5.63	5.21	6.82	7.32	5.97	4.28
D	c14	M	2.67	2.6	2.45	0.09	1.82	10.26	10.09	2.71	2.43
D	c15	F	3.71	4.09	4.29	4.84	5.01	6.89	7.3	6.29	3.79

D	c16	F	5.37	6.35	5.74	6.21	5.61	6.8	6.16	6.57	4.98
D	c17	F	3.91	4.43	4.89	5.45	3.66	7.37	6.63	6.33	4.01
D	c18	M	3.4	3.56	4.07	4.97	4.23	5.87	7.26	5.01	3.39
D	c19	M	6.16	6.06	5.65	5.64	5.6	6.48	5.68	6.15	4.28
D	c20	M	4.73	4.37	4.61	4.48	4.63	5.69	5.54	5.09	3.09
D	c21	M	3.62	4.12	5.01	4.54	3.8	5.01	6.22	5.68	4.39
D	c22	F	4.05	3.84	5.35	4.82	6.12	7.47	5.93	5.87	4.25
D	c23	F	3.55	3.53	4.12	4.5	3.65	5.76	5.79	5.36	3.56
D	c24	M	3.41	3.33	3.59	3.86	4.16	7.1	5.27	4.83	2.93
D	c25	M	3.5	3.63	5.18	4.01	4.82	6.55	6.49	5.72	3.81
D	c26	F	5.85	5.68	5.79	5.43	5.68	6.13	4.45	5.72	4.95
D	c27	F	4.96	5.29	5.5	4.99	7.51	8.99	7.32	7.57	5.22
D	c28	M	3.35	3.13	4.93	2.52	3.64	4.7	5.35	5.25	3.54
D	c29	F	4.16	4.7	5.2	5.03	5.85	7.57	7.43	6.38	5.11
D	c30	F	3.42	3.96	4.29	5.03	4.41	6.67	4.88	5.55	3.53
D	c31	M	3.41	3.59	3.88	4.23	4.1	5.64	5.1	4.9	2.81
D	c32	F	3.63	3.68	4.29	4.29	4.78	6.89	6.14	5.84	3.06
D	c33	M	5.27	5.48	5.96	5.55	5.96	5.95	4.46	5.57	4.98
D	c34	F	3.91	3.96	4.31	4.49	5	6.02	5.66	5.27	4.02
D	c35	M	5.48	6.47	6.04	5.83	5.59	8.23	7.33	7.04	4.55
D	c36	M	3.92	3.8	4.99	4.71	3.75	5.86	6.34	6.08	4.17
D	c37	F	3.52	3.52	4.59	3.95	4.54	6.68	6.59	6.37	3.29
D	c38	F	3.96	4.3	4.29	4.37	4.28	6.61	5.62	5.74	3.49
D	c39	M	3.3	3.28	3.68	4.1	5.51	6.4	5.2	5.12	3.4

D	c40	F	3.09	3.51	3.48	4.07	4.07	4.69	6.38	4.55	2.78
D	c41	F	3.85	4.29	4.58	3.98	4.41	5.27	5.1	4.68	3.88
D	c42	M	4.16	4.02	4.53	4.52	5.05	7.35	6.9	6.36	4.35
D	c43	M	3.3	3.62	3.91	4.27	4.1	6.81	6.34	4.99	3.86
D	c44	F	3.88	3.53	4.2	5.44	5.01	6.39	6.89	5.16	3.78
D	c45	M	5.4	5.08	4.77	5.57	5.17	9.81	6.27	6.06	5.46
D	c46	M	3.71	3.75	4.4	4.56	4.41	6.12	5.96	6.03	4.16
D	c47	M	3.53	3.61	4.09	4.46	4.18	5.42	5.18	4.86	3.8
D	c48	M	4.27	4.2	4.72	5.24	4.77	6.67	6.85	6.22	3.62
D	c49	M	5.33	5.58	5.69	5.52	5.8	9.95	7.86	7.55	5.36
D	c50	M	4.2	3.94	5.11	2.02	4.72	8.56	5.17	5.13	4.49
D	c51	F	3.48	4.02	3.88	4.25	4.22	6.41	5.98	4.77	4.43
D	c52	F	4.08	4.45	4.51	4.27	4.63	6.01	5.18	5.02	5.04
D	c53	M	3.81	4.46	4.64	4.5	5.16	6.41	4.72	4.36	4.71
D	c54	M	3.9	3.84	4.46	4.77	4.34	6.59	5.66	5.26	3.46
D	c55	M	5.28	5.24	5.68	5.88	5.47	7.61	7.21	7.06	4.92
D	c56	F	5.22	5.59	5.14	5.41	5.07	9.29	7.2	7.39	4.99
D	c57	M	3.61	3.9	4.17	5.09	4.99	7.77	6.75	5.88	3.51
D	c58	M	3.35	3.31	4.77	4.03	4.14	4.99	4.01	5.08	3.92
D	c59	F	3.09	3.8	3.73	3.94	4.35	7.16	5.98	5.28	3.78
D	c60	F	3.6	4.6	4.14	5.77	4.09	7.06	6.54	5.74	3.54
D	c61	F	5.13	6.13	5.16	5.64	5.02	6.18	6.44	5.59	4.03
D	c62	F	3.89	4.25	4.47	4.6	4.5	4.87	5.06	5.3	4.12
D	c63	F	3.98	3.61	4.55	4.66	4.55	5.44	5.74	4.66	4.19

D	c64	F	2.72	3.29	3.16	3.83	3.77	4.42	4.09	4.26	2.71
D	c65	M	5.22	5.35	4.65	5.85	6.26	7.08	6.65	5.71	4.47
D	c66	F	4.98	5.05	4.95	6.05	5.72	7.66	7.71	6.59	5.31
D	c67	F	3.52	3.52	4.67	4.1	5.43	7.22	6.22	6.45	3.77
D	c68	F	5.23	6.15	5.45	5.98	6.31	6.59	6.41	5.93	4.53
D	c69	M	3.78	3.41	4.81	3.92	4	7.15	4.84	6.12	4.53
D	c70	M	5.83	5.45	5.9	6.09	7.57	9.02	5.12	6.8	5.46
D	c71	M	3.51	3.49	4.34	4.1	4.51	3.97	4.12	4.68	2.32
D	c72	F	3.97	4.42	4.21	4.63	3.7	6.83	5.47	5.48	3.72
D	c73	F	3.02	2.91	4.26	4.59	4.17	4.31	4.33	3.82	3.67
D	c74	M	4.12	4.2	4.53	4.91	4.53	6.82	5.04	6.47	3.81
D	c75	M	4.23	3.58	5.02	4.36	4.51	3.09	2.14	3.93	5.05
D	c76	F	5.33	6.75	6.32	5.91	5.63	9.01	6.73	7.25	4.92
D	c77	F	4.57	4.55	3.82	4.85	3.74	5.24	5.44	4.58	3.11
D	c78	F	5.5	5.5	6.13	5.36	5.33	7.88	6.59	7.09	4.91
D	c79	F	5.63	6.19	6.23	5.79	5.32	8.75	4.42	7.43	5.21
D	c80	F	3.52	3.71	4.12	4.78	5.09	5.59	6.03	5.09	3.87
D	c81	M	4.34	3.92	4.74	5.33	4.33	6.01	5.12	5.24	4.14
D	c82	M	4.01	3.47	4.12	4.55	4.67	6.89	6.81	6.2	3.5
D	c83	F	4.59	4.13	5.17	3.83	4.07	4.56	3.21	4.84	4.26
D	c84	F	3.88	4.01	4.6	4.33	4.74	7.22	6.26	5.46	4.25
D	c85	M	3.96	3.65	5.44	4.37	4.54	6.32	4.44	5.02	4.8
D	c86	F	3.18	2.79	4.26	4.39	4.05	6.05	4.43	5.71	3.78
D	c87	F	4.16	4.57	5.12	4.72	5.24	7.05	6.33	6.1	4.5

D	c88	M	5.04	4.84	4.63	5.22	4.58	7	5.34	5.26	5.28
D	c89	M	3.17	3.01	4	4.24	4.54	5.21	7.71	4.54	3.03
D	c90	M	3.26	4.55	3.93	5.22	4.91	7.78	6.62	5.82	4.77
D	c91	F	2.68	3.64	3.85	4.53	3.51	5.76	6.23	5.38	2.65
D	c92	F	3.55	3.94	4.49	5.19	3.46	5.53	5.25	5.6	3.6
D	c93	M	3.3	3.76	3.34	3.82	3.64	5.89	4.52	4.47	3.18
D	c94	M	5.27	4.76	5.35	3.98	5.48	8.91	7.7	7.13	4.79
D	c95	M	3.53	3.67	4.16	5.6	4.21	5.99	7.27	4.95	2.5
D	c96	F	3.86	4.04	4.69	4.32	4.53	3.96	3.19	4.62	4.06
D	c97	M	4.57	4.32	4.77	4.56	4.62	4.28	4.18	4.69	4.76
D	c98	F	3.32	3.77	4.37	4.34	3.68	6.04	5.42	5.34	3.22
D	c99	F	3.32	3.68	4.83	3.46	4.22	1.67	3.08	2.89	3.15
D	c100	F	3.19	3.06	3.43	3.8	4.37	6.42	3.83	5.03	3.77
D	c101	F	5.28	6.4	5.17	5.86	6.01	9.21	8.31	7.21	4.78
D	c102	F	3.76	3.96	5.61	4.35	4.95	6.28	6.52	6.1	3.48
D	c103	F	5.72	5.83	6.01	6.05	5.75	6.22	6.35	6.09	5.21
D	c104	M	4.33	4.88	6.02	4.7	6.23	4.73	5.98	5.41	5.63
D	c105	M	4.14	4.25	5.05	4.39	4.39	6.68	6.41	5.85	4.49
D	c106	M	3.58	3.61	4.1	4.54	4.5	6.33	6.49	5.34	3.23
D	c107	M	4.68	4.17	6.27	4.93	4.93	7.35	7.8	7.34	4.44
D	c108	F	4.27	4.42	4.5	4.69	4.17	5.53	6.55	5.26	3.88
D	c109	F	5.87	5.55	5.48	6.29	4.61	8.71	4.03	7.08	4.89
D	c110	F	3.74	4.65	5.11	4.59	4.54	6.97	6.01	6.61	3.92
D	c111	M	3.51	4.15	3.5	3.91	3.31	6.07	5.84	4.81	3.74

D	c112	F	4.05	4.82	4.24	4.99	4.74	8	7.82	6.79	3.81
D	c113	M	5.37	5.79	5.47	5.2	5.56	9.15	6.25	7.49	4.85
D	c114	M	3.59	3.99	3.82	5.03	3.96	6.69	5.97	5.33	3.32
D	c115	F	3.76	3.79	3.98	3.51	3.39	4.38	2.58	3.95	3.37
ND	c116	M	4.99	4.97	5.68	5.8	5.8	6.42	6.78	6.41	4.81
ND	c117	F	4.53	3.99	5.5	4.9	5.14	6.69	5.11	5.81	5.41
ND	c118	M	3.95	3.87	5.12	4.49	4.16	6.9	3.5	6.69	4.14
ND	c119	F	4.74	4.58	5.34	5.24	5.33	7.51	7.81	6.58	4.66
ND	c120	F	2.86	4.06	3.98	4.18	4.79	5.88	5.33	6.03	3.54
ND	c121	F	3.61	3.21	4.28	3.15	2.72	4.34	1.79	3.31	3.22
ND	c122	F	5.25	4.71	5.49	5.31	5.44	6.09	5.47	5.84	4.79
ND	c123	F	3.62	4.58	4.49	5	4.75	6.74	6.79	5.76	3.86
ND	c124	F	4.27	3.69	4.67	4.81	5.66	5.29	5.65	4.92	3.76
ND	c125	F	4.07	4.03	4.37	4.51	4.31	6.34	6.12	5.25	4.03
ND	c126	M	5.8	5.46	5.73	5.63	5.93	8.91	7.66	7.25	4.97
ND	c127	M	5.19	5.42	5.45	5.69	6.16	8.53	5.83	6.89	4.33
ND	c128	M	4.42	4.43	4.75	5.07	5.15	5.71	7.26	5.65	3.41
ND	c129	F	3.77	3.6	4.12	4.76	4.49	5.22	5.47	5.67	3.33
ND	c130	F	3.96	3.95	5.61	4.2	5.78	7.02	5.08	6.16	4.82
ND	c131	F	5.1	7.6	5.48	7.23	5.45	9.98	8.43	7.56	4.25
ND	c132	F	4.95	3.5	4.52	1.74	3.86	1.44	1.44	1.7	4.35
ND	c133	M	3.93	3.54	5.63	4.23	5.89	6.88	7.01	6.04	5.06
ND	c134	M	4.92	5.74	5.83	4.44	5.95	7.31	6.78	7.17	4.38
ND	c135	F	3.13	4.02	3.65	4.76	2.73	5.76	5.51	5.09	2.83

ND	c136	M	3.17	3.79	3.77	5.83	3.72	6.06	6.08	4.8	2.94
ND	c137	M	4.94	4.67	5.4	5.09	5.31	9.1	6.38	7.03	4.25
ND	c138	F	5.39	5.32	6.17	5.03	6.37	5.8	6.62	7.09	5.65
ND	c139	M	3.5	3.24	3.89	3.61	5.38	6.44	5.84	5.25	3.57
ND	c140	F	4.93	6.2	4.74	5.17	4.8	8.62	7.15	6.49	4.69
ND	c141	F	3.46	3.77	3.86	3.36	3.49	8.13	7.31	5.8	3.01
ND	c142	M	5.8	5.49	5.74	6.68	5.61	8.22	8.84	6.7	5.13
ND	c143	M	4.42	4.98	5.58	5.05	7.68	7.09	6.3	6.7	3.76
ND	c144	M	5.64	5.32	6.35	6.28	6.74	8.19	7.75	7.54	6.51
ND	c145	F	5.19	5.35	5.21	6.12	4.96	8.07	8.08	6.52	4.9
ND	c146	F	4.82	5.95	4.96	6.03	4.7	8.28	8.16	6.96	4.43
ND	c147	M	5.04	5.64	6.12	5.66	5.78	6.6	6.25	6.84	5.26
ND	c148	F	3.82	4.42	4.17	4.78	4.74	7.46	6.87	5.81	3.02
ND	c149	M	4.02	3.9	4.65	4.59	4.25	5.64	5.06	5.66	3.63
ND	c150	F	4.52	4.35	4.35	4.87	4.06	5.26	4.97	4.52	3.9
ND	c151	F	5.15	6.89	5.79	5.6	5.31	8.12	7.33	7.38	4.42
ND	c152	M	3.59	3.33	3.73	4.29	3.47	5.99	6.05	4.88	3.01
ND	c153	M	5.28	5.19	5.22	4.14	5.45	8.47	8.34	6.73	4.41
ND	c154	M	5.94	5.88	6.09	5.73	6.09	6.7	5.53	6.69	5.13
ND	c155	F	5.12	4.72	4.96	5.29	4.92	5.74	6.42	6.13	4.36
ND	c156	M	3.41	3.94	4.19	3.83	4.8	7.79	6.69	6.43	3.31
ND	c157	F	4.07	4.64	5	5.05	3.89	6.8	4.77	6.14	4.35

2.0 EPI DATA CORRESPONDING TO THE SIZE OF CHAKRAS FOR DIABETIC AND NON-DIABETIC SUBJECTS

The EPI instrument provides a chakra view. This view provides parameters related to the psychological and spiritual condition, by processing the EPI grams from the ten fingers and connecting the chakra with the part of the finger to which corresponding systems of the human body are projected. This view presents an estimate of .chakra energies. The data below represents the energy energy of the chakras.

D or ND	Name	Gender	Muladhara	Svadhisthana	Manipura	Anahata	Vishuddha	Ajna	Sahasrara
D	c1	M	5.27	4.98	5.1	5.26	5.5	3.2	3.62
D	c2	F	7.74	6.54	6.67	6.42	6.81	5.7	6.14
D	c3	M	5.23	3.25	4.62	5.72	4.39	3.67	3.96
D	c4	F	5.37	5.54	5.33	5.24	4.76	3.83	4.57
D	c5	F	7.03	6.78	7.05	6.2	5.74	5.09	5.5
D	c6	M	6.61	5.79	5.87	5.97	6.28	3.34	4.26
D	c7	M	4.89	4.94	5.14	5.43	5	4.19	3.89
D	c8	F	6.34	6.27	6.39	6.89	7.76	5.39	6.18
D	c9	M	5.9	5.32	5.42	6.23	5.05	4.2	4.67
D	c10	M	5.36	4.8	5.33	5.52	4.75	4.25	4.66
D	c11	F	6.6	4.59	5.93	4.94	5.09	4.57	5.41
D	c12	M	5.44	5.05	5.59	5.74	4.48	3.98	4.83
D	c13	F	6.39	5.96	5.43	5.31	5.28	4.33	4.69
D	c14	M	3.24	5.72	4.45	6.32	6.91	2.68	1.08
D	c15	F	5.23	5.99	5.4	5.51	4.88	3.97	4.72
D	c16	F	6.7	5.52	6.42	6.08	6.75	5.88	6.03

D	c17	F	5.7	5.15	5.73	5.05	4.47	4.18	4.6
D	c18	M	4.71	5.9	4.72	4.69	4.52	3.43	4.07
D	c19	M	6.03	5.27	5.7	4.8	6.43	6.09	5.67
D	c20	M	5.56	4.92	4.83	4.89	5.22	4.42	4.81
D	c21	M	5.77	5.34	5	5.48	4.77	4.04	4.54
D	c22	F	5.76	5.69	5.98	5.84	5.94	4.03	4.99
D	c23	F	4.95	4.51	4.72	4.49	5.5	3.54	4.06
D	c24	M	5.32	4.14	4.72	4.76	4.6	3.42	3.58
D	c25	M	5.16	5.35	5.92	5.39	5.09	3.61	3.99
D	c26	F	4.03	4.7	5.47	6.14	5.31	5.77	5.82
D	c27	F	6.79	6.96	6.87	7.24	7.2	5.18	5.15
D	c28	M	4.79	4.6	5.14	4.43	4.78	3.27	2.98
D	c29	F	6.43	6.21	6.17	6.15	6.32	4.43	5.26
D	c30	F	5.09	4.26	5.45	4.56	4.22	3.83	4.27
D	c31	M	4.99	4.42	4.38	4.34	4.54	3.47	3.45
D	c32	F	5.8	5.14	5.46	5.72	5.09	3.64	4.27
D	c33	M	5.91	5.01	5.71	6.17	5.89	5.26	5.34
D	c34	F	5.33	5.12	4.97	5.57	5.34	3.97	5.01
D	c35	M	7.09	6.34	6.75	6.39	7.17	5.96	6
D	c36	M	5.4	5.55	5.49	6.16	4.95	3.88	4.67
D	c37	F	6.25	5.48	5.48	5.97	5.38	3.55	4.33
D	c38	F	5.56	4.74	5.15	5.06	4.44	4.12	4.47
D	c39	M	5	4.94	4.82	5.31	5.19	3.33	4.15
D	c40	F	4.57	5.02	3.8	4.5	4.15	3.3	3.73

D	c41	F	4.94	4.65	4.74	4.62	5.56	4.13	4.29
D	c42	M	6.14	5.77	5.86	6	6.23	4.07	4.94
D	c43	M	5.2	5.06	5.18	5.03	4.5	3.43	3.84
D	c44	F	5.78	5.63	5.35	5.27	5.42	3.71	4.13
D	c45	M	6.35	5.62	6.68	6.05	7.34	5.33	5.7
D	c46	M	5.52	5	5.14	6.11	6.52	3.77	4.57
D	c47	M	5.11	4.58	4.78	5.46	4.82	3.67	4.18
D	c48	M	6.42	5.76	5.49	6.06	6.17	4.3	4.84
D	c49	M	7.4	6.48	7.41	7.25	7.35	5.45	5.2
D	c50	M	5.9	5.04	6.28	2.24	5.4	4.09	4.93
D	c51	F	5.41	4.89	4.93	4.22	4.17	3.86	4.21
D	c52	F	5.58	4.76	5.32	4.86	5.28	4.24	4.48
D	c53	M	4.82	4.64	4.89	4.64	4.37	4.13	4.77
D	c54	M	4.98	4.72	5.12	5.33	5.07	3.92	4.37
D	c55	M	7.21	6.08	6.55	7.07	7.81	5.38	5.99
D	c56	F	7.41	5.8	6.73	6.47	7.68	5.42	5.04
D	c57	M	5.59	5.6	5.68	5.05	5.21	3.77	4.9
D	c58	M	5.48	4.11	4.8	5.47	4.05	3.47	4.21
D	c59	F	5.11	4.84	5.23	5.06	3.72	3.46	3.54
D	c60	F	5.46	5.1	5.42	5.54	4.16	4.06	4.77
D	c61	F	5.95	5.48	5.28	5.51	6.3	5.58	5.67
D	c62	F	5.01	4.46	4.68	4.43	4.65	4.13	4.55
D	c63	F	5.76	5.1	4.61	5.27	4.97	3.84	4.96
D	c64	F	4.34	3.6	3.68	4.23	3.81	3.03	3.63

D	c65	M	5.79	5.67	5.49	6.54	6.32	5.27	3.97
D	c66	F	6.79	6.41	6.06	6.64	7.36	4.97	5.52
D	c67	F	5.5	5.27	5.68	5.8	6.23	3.51	4.49
D	c68	F	4.88	5.98	5.42	6.22	5.25	5.57	5.5
D	c69	M	4.75	4.43	5.61	6.07	4.93	3.61	4.37
D	c70	M	7.42	5.62	6.7	6.7	6.77	5.56	4.99
D	c71	M	4.55	4.14	3.74	5.1	4.45	3.56	3.98
D	c72	F	5.45	4.49	5.25	5.93	4.79	4.19	4.75
D	c73	F	4.13	4.3	3.96	4.78	4.01	2.96	4.35
D	c74	M	5.29	4.77	5.07	5.72	4.53	4.3	4.39
D	c75	M	4.67	3.21	3.92	4.09	3.83	3.88	4.82
D	c76	F	7.45	6	7.16	6.91	7.12	5.98	6.55
D	c77	F	4.68	4.46	4.25	4.76	4.82	4.62	3.95
D	c78	F	6.98	6.36	6.76	5.62	6.81	5.48	6.11
D	c79	F	6.29	5.02	7.06	5.87	6.2	5.9	5.71
D	c80	F	5.06	5.15	5.01	4.53	4.48	3.66	4.31
D	c81	M	5.44	4.8	5.11	5.15	5.37	4.17	4.81
D	c82	M	5.57	5.31	5.25	5.65	6.02	3.78	4.33
D	c83	F	4.89	3.7	4.92	4.26	5.17	4.36	4.59
D	c84	F	5.99	5.4	5.65	5.23	5.4	3.96	4.7
D	c85	M	4.97	4.51	5.55	4.33	5.18	3.8	4.95
D	c86	F	6.05	4.04	5.02	4.55	4.34	2.99	4.12
D	c87	F	5.91	5.76	5.91	5.51	6.16	4.42	4.79
D	c88	M	5.83	4.88	5.59	5.68	5.29	4.8	5.13

D	c89	M	4.91	5.76	4.47	5.13	5.23	3.22	3.93
D	c90	M	5.17	5.32	5.78	5.08	3.53	3.88	4.11
D	c91	F	5.2	4.86	4.53	5.08	4.08	3.2	4.34
D	c92	F	5.38	4.41	4.84	5.64	5	3.85	5.06
D	c93	M	4.95	3.74	4.38	4.12	4.31	3.51	4
D	c94	M	6.72	6.49	6.68	6.43	7.44	5.02	4.7
D	c95	M	4.98	5.82	4.65	4.79	4.35	3.61	4.85
D	c96	F	4.96	3.69	4.41	4.5	4.84	3.93	4.45
D	c97	M	4.71	4.28	4.34	4.73	4.75	4.48	4.95
D	c98	F	5.68	4.73	5.12	4.91	4.59	3.53	3.92
D	c99	F	3.42	3.62	3.11	3.11	3.73	3.52	3.92
D	c100	F	5.32	3.75	4.9	5.37	4.9	3.22	3.59
D	c101	F	7.21	6.73	6.83	6.53	6.83	5.77	5.27
D	c102	F	5.97	5.57	5.47	5.81	5.8	3.93	4.23
D	c103	F	6.31	5.98	6.05	6.57	6.85	5.78	6.16
D	c104	M	6.42	5.86	5.26	5.81	6.6	4.55	5.85
D	c105	M	6.2	5.3	5.6	5.95	5.9	4.17	4.8
D	c106	M	5.44	5.12	4.85	5.52	5.6	3.59	4.5
D	c107	M	6.77	6.24	6.62	6.26	7.73	4.45	5.34
D	c108	F	5.42	5.33	4.76	4.9	5.33	4.3	4.15
D	c109	F	6.65	4.38	6.6	5.51	8.16	5.49	5.63
D	c110	F	5.77	5.31	5.93	4.65	4.94	4.41	4.69
D	c111	M	5.03	4.48	4.54	5.04	4.85	3.88	3.51
D	c112	F	6.38	6.08	5.86	6.59	6.26	4.53	5.12

D	c113	M	7.59	5.64	7	7.11	7.65	5.57	5.12
D	c114	M	5.14	4.91	4.93	5.24	5.6	3.79	3.99
D	c115	F	4.33	3	3.8	2.82	4.51	3.74	4.12
ND	c116	M	6.45	6.01	5.8	6.18	6.5	5.12	5.52
ND	c117	F	6.14	5.04	5.97	5.76	6.25	4.33	5.3
ND	c118	M	5.4	3.84	5.52	4.68	5.28	3.97	4.31
ND	c119	F	6.41	6.59	6.11	6.77	6.09	4.71	5.09
ND	c120	F	4.63	4.64	4.97	5.01	3.41	3.38	4.91
ND	c121	F	3.59	2.26	3.43	2.48	2.67	3.42	3.65
ND	c122	F	6	5.35	5.73	5.58	6.92	4.82	5.29
ND	c123	F	5.11	5.3	5.34	5.84	3.81	4.05	4.73
ND	c124	F	5.6	5.19	4.66	5.15	4.93	4.06	4.7
ND	c125	F	5.42	5.1	5.2	5.31	4.82	4.06	4.82
ND	c126	M	7.48	6.24	6.99	6.58	6.61	5.58	4.25
ND	c127	M	7.05	5.41	6.46	6.15	7.09	5.28	5.46
ND	c128	M	5.73	5.92	4.98	5.87	4.83	4.52	5.08
ND	c129	F	5.16	4.96	4.75	4.81	5.91	3.76	4.53
ND	c130	F	5.99	5.1	6.09	6.19	6.01	3.92	4.77
ND	c131	F	7.1	6.48	7.05	6.43	6.19	6.31	5.91
ND	c132	F	3.46	2.98	2.76	3.92	3.77	4.24	4.36
ND	c133	M	5.02	6.26	6.03	5.23	5.18	3.79	5.66
ND	c134	M	6.81	6.1	6.42	6.79	6.21	5.42	5.22
ND	c135	F	5.07	4.13	4.6	5.16	3.95	3.52	3.56
ND	c136	M	5.23	4.61	4.51	4.62	3.49	3.47	4.09

ND	c137	M	6.97	5.66	6.76	6.3	6.72	4.82	4.89
ND	c138	F	5.21	6.05	6.12	5.99	5.5	5.37	5.38
ND	c139	M	4.97	5.08	4.82	5.52	5.01	3.4	3.91
ND	c140	F	6.9	5.85	6.42	6.09	6.3	5.5	5.12
ND	c141	F	5.48	5.31	5.46	5.16	4.9	3.57	3.9
ND	c142	M	7.21	7.03	6.54	7.01	7.62	5.61	5.73
ND	c143	M	6.27	6.86	5.67	7.27	6.54	4.61	5.01
ND	c144	M	7.75	7.04	7.96	7.02	7.97	5.47	6.22
ND	c145	F	7.07	6.34	6.26	6.26	7.18	5.17	5.09
ND	c146	F	6.62	6.42	6.26	6.2	6.72	5.41	5.74
ND	c147	M	6.43	5.78	6.27	6.83	6.82	5.3	5.8
ND	c148	F	6.29	5.55	5.26	5.4	5.07	4.06	4.82
ND	c149	M	4.84	4.48	4.98	5.38	4.45	3.92	4.48
ND	c150	F	4.66	4.47	4.48	4.76	4.56	4.44	4.49
ND	c151	F	7.07	6.2	6.73	6.83	7.65	5.92	5.65
ND	c152	M	5.27	4.51	4.65	4.94	4.85	3.46	3.72
ND	c153	M	6.77	6.56	6.57	6.49	6.08	5.21	4.44
ND	c154	M	6.81	5.38	6.22	6.38	4.57	5.86	5.96
ND	c155	F	5.3	5.35	5.06	6.42	5.6	4.89	5.52
ND	c156	M	6.14	5.45	5.73	6.16	5.1	3.65	4.87
ND	c157	M	6.17	4.35	5.88	5.11	5.03	4.35	4.62
ND	c158	M	0.83	0.7	0.64	0.68	1.2	0.62	0.61
ND	c159	M	0.84	0.73	0.69	0.58	1.15	0.53	0.42
ND	c160	F	0.7	0.65	0.63	0.64	1	0.61	0.54

ND	c161	M	0.83	0.54	0.69	0.68	0.87	0.29	0.57
ND	c162	M	0.48	0.43	0.33	0.44	0.58	0.45	0.3
ND	c163	M	0.49	0.44	0.42	0.55	1.03	0.33	0.51
ND	c164	M	0.63	0.48	0.52	0.56	0.81	0.46	0.55
ND	c165	M	0.76	0.5	0.6	0.49	0.93	0.61	0.46
ND	c166	M	0.44	0.33	0.31	0.35	0.82	0.73	0.28
ND	c167	M	0.5	0.54	0.53	0.59	0.95	0.62	0.51
ND	c168	M	0.52	0.43	0.47	0.39	0.65	0.45	0.24
ND	c169	M	0.41	0.48	0.4	0.43	0.54	0.31	0.3
ND	c170	M	0.77	0.57	0.54	0.6	1.02	0.56	0.55
ND	c171	F	0.77	0.71	0.64	0.64	0.96	0.5	0.66
ND	c172	M	0.75	0.48	0.58	0.38	0.7	0.6	0.47
ND	c173	M	0.8	0.63	0.85	0.63	0.8	0.78	0.58
ND	c174	M	0.4	0.36	0.34	0.36	0.68	0.51	0.38
ND	c175	M	0.47	0.43	0.45	0.4	0.62	0.36	0.42
ND	c176	M	0.62	0.52	0.45	0.43	0.65	0.5	0.45
ND	c177	F	0.55	0.41	0.43	0.4	0.75	0.47	0.37
ND	c178	F	0.2	0.11	0.17	0.14	0.43	0.19	0.28
ND	c179	M	0.45	0.34	0.41	0.29	0.59	0.37	0.38
ND	c180	F	0.56	0.43	0.47	0.34	0.73	0.71	0.42
ND	c181	M	0.63	0.49	0.44	0.32	0.73	0.36	0.27
ND	c182	M	0.5	0.28	0.33	0.42	0.85	0.61	0.26
ND	c183	M	0.51	0.46	0.45	0.42	0.65	0.43	0.48
ND	c184	F	0.46	0.38	0.38	0.27	0.73	0.32	0.37

ND	c185	M	0.47	0.31	0.33	0.24	0.51	0.46	0.23
ND	c186	M	1.1	1.12	1.12	0.93	1.03	0.97	0.79
ND	c187	M	0.67	0.7	0.75	0.67	0.94	0.74	0.7
ND	c188	F	1.11	0.96	0.96	0.96	1.31	0.82	0.64
ND	c189	M	0.7	0.65	0.78	0.54	0.85	0.5	0.5
ND	c190	M	0.61	0.38	0.52	0.5	0.75	0.57	0.49
ND	c191	M	1.09	0.81	1.02	0.94	1.36	0.69	0.55
ND	c192	M	0.86	0.59	1.01	0.68	0.96	0.74	0.72
ND	c193	F	0.82	0.81	0.94	0.92	1.04	0.71	0.7
ND	c194	F	0.42	0.28	0.38	0.28	0.51	0.44	0.19
ND	c195	F	0.38	0.37	0.45	0.28	0.67	0.45	0.26
ND	c196	M	0.46	0.52	0.43	0.41	0.62	0.55	0.35
ND	c197	F	0.53	0.51	0.44	0.63	0.88	0.15	0.3
ND	c198	M	0.51	0.41	0.54	0.4	0.65	0.4	0.37
ND	c199		0.61	0.32	0.45	0.4	1.18	0.4	0.29

3.0 EPI DATA CORRESPONDING TO THE LEFT HAND AND RIGHT HAND RING FINGER

The data below presents the energy of the organs and Organs systems. Here D stands for Diabetic and ND is Non-Diabetic.

D or ND	Name	Gender	Hypothalamus	Thyroid gland	Pancreas	Adrenals	Urino-genital system	Spleen	Nervous system	Hypothalamus	Nervous system	Spleen	Urino-genital system	Adrenal	Pancreas	Thyroid gland

D	c1	M	3.59	3.41	4.96	5.15	6.15	3.91	3.19	833	509	1120	3485	705	799	865
D	c2	F	5.72	5.21	6.31	5.58	7.42	6.58	5.33	1302	705	1593	3252	748	875	1084
D	c3	M	4.39	3.53	3.55	3.08	2.95	3.78	4.07	999	562	902	1494	452	609	737
D	c4	F	4.82	4.64	4.46	5.79	6.73	4.71	4.1	1419	594	1096	3388	848	641	899
D	c5	F	5.53	6.19	7.28	8.22	7.15	5.48	5.7	1155	725	1276	3162	984	843	1271
D	c6	M	5.43	3.93	4.91	5.51	6.85	5.86	4.5	1312	637	1462	3489	811	726	873
D	c7	M	4.11	3.27	4.08	4.65	6	4.75	3.75	1128	601	1230	3208	665	607	774
D	c8	F	6.59	5.35	5.26	5.72	7.1	6.29	5.34	1406	701	1392	3166	596	717	1081
D	c9	M	4.38	3.76	4.25	5.72	6.72	4.27	3.87	1095	538	1142	3376	781	755	785
D	c10	M	4.72	5.1	5.24	4.74	4.95	4.3	4.56	995	595	936	2558	547	670	905
D	c11	F	5.18	4.94	4.54	5.11	4.64	4.33	4.46	1147	616	857	2482	619	711	1019
D	c12	M	5.29	4.75	4.91	6.21	5.41	4.25	4.82	1089	647	954	2161	842	620	968
D	c13	F	4.47	5.27	5.21	6.5	7.32	4.26	3.96	745	395	1218	3504	917	729	1005
D	c14	M	0.93	1.84	1.82	3.39	10.09	3.7	1.27	0	18	555	7427	188	314	23
D	c15	F	4.96	4.56	5.01	5.63	7.3	5.21	4.57	1066	572	1316	2716	736	610	855
D	c16	F	5.79	5.09	5.61	5.99	6.16	4.48	4.69	1406	597	1201	2737	756	752	1083
D	c17	F	4.28	3.67	3.66	5.35	6.63	4.19	3.36	955	498	1097	3417	626	588	812
D	c18	M	4.31	4.01	4.23	4.97	7.26	5.16	4.46	1108	771	968	2318	886	563	771
D	c19	M	5.41	4.98	5.6	6.33	5.68	4.03	4.92	1115	540	949	3013	755	724	910
D	c20	M	5.13	4.13	4.63	5.08	5.54	4.44	4.45	1224	637	980	2448	786	490	893
D	c21	M	4.98	3.96	3.8	4.13	6.22	5.39	4.98	1138	602	1284	2708	532	492	745
D	c22	F	5.15	5.34	6.12	6.95	5.93	4.73	4.42	1096	536	1062	2773	892	826	992

D	c23	F	2.94	3.54	3.65	4.98	5.79	3.82	3.23	628	458	984	2448	884	589	760
D	c24	M	2.4	3.47	4.16	5.78	5.27	2.49	1.99	815	419	675	3138	761	795	908
D	c25	M	4.36	3.58	4.82	6.25	6.49	4.27	3.53	1123	548	1114	3609	934	789	934
D	c26	F	6.03	5.73	5.68	5.48	4.45	4.02	4.6	1281	546	1771	3023	602	881	1202
D	c27	F	5.13	6.78	7.51	8.55	7.32	5.08	5.23	1102	969	1193	3617	866	1077	1394
D	c28	M	3.68	3.46	3.64	3.52	5.35	5.24	3.37	1024	618	1184	3175	551	476	722
D	c29	F	5.18	5.06	5.85	7.73	7.43	4.27	4.82	1072	588	1107	3069	943	757	995
D	c30	F	4.09	3.99	4.41	4.49	4.88	3.42	3.11	1093	483	1109	2088	655	674	943
D	c31	M	3.42	3.51	4.1	4.61	5.1	3.9	3.43	825	494	1121	2715	660	663	879
D	c32	F	4.08	3.9	4.78	4.8	6.14	4.77	3.83	900	508	1078	2995	632	606	701
D	c33	M	5.99	5.59	5.96	5.15	4.46	5.29	5.75	1473	873	1418	2760	673	788	1095
D	c34	F	4.79	4.9	5	5.03	5.66	5.05	3.94	1157	585	1100	2640	659	660	930
D	c35	M	5.27	5.68	5.59	8.08	7.33	5.15	4.55	1181	648	1208	3874	901	827	1173
D	c36	M	5.06	4.22	3.75	5.15	6.34	5.44	5.12	1253	759	1204	2533	860	574	857
D	c37	F	4.44	4.07	4.54	5.52	6.59	4.98	4.54	1016	582	1276	3200	659	623	844
D	c38	F	4.63	3.98	4.28	4.25	5.62	4.19	4.19	1009	614	998	2584	516	645	838
D	c39	M	4.05	5.4	5.51	6.61	5.2	3.13	3.72	935	596	587	3424	754	774	1121
D	c40	F	3.69	3.45	4.07	4.97	6.38	4.14	3.54	858	508	1029	3492	662	668	818
D	c41	F	4.73	3.96	4.41	4.76	5.1	4.34	4.27	1216	603	1016	2306	644	610	835
D	c42	M	4.47	4.38	5.05	6.16	6.9	4.87	4.28	1119	698	1154	3615	984	772	1008
D	c43	M	3.85	3.7	4.1	4.99	6.34	4.24	3.39	872	415	1243	3032	617	614	804
D	c44	F	3.62	3.83	5.01	6.86	6.89	4.61	3.72	1013	572	1126	3564	795	782	777
D	c45	M	5.92	5.81	5.17	5.69	6.27	4.78	5.02	1272	634	1173	2399	767	691	1056

D	c46	M	4.57	4.21	4.41	5.7	5.96	3.69	3.89	1080	478	1050	2876	822	667	905
D	c47	M	4.01	3.91	4.18	5.24	5.18	3.83	3.44	1102	543	1029	2916	813	591	884
D	c48	M	4.49	4.06	4.77	5.79	6.85	5.24	4.59	1183	676	1399	3542	713	720	881
D	c49	M	4.58	4.82	5.8	6.96	7.86	5.47	4.31	1183	613	1186	3910	892	826	1029
D	c50	M	5.28	5.41	4.72	5.77	5.17	4.74	5.16	959	578	1109	1952	742	627	952
D	c51	F	4.01	3.87	4.22	4.84	5.98	4.15	3.54	897	471	1054	2843	593	633	838
D	c52	F	4.66	4.28	4.63	4.57	5.18	4.63	4.35	1221	635	1106	2203	658	549	753
D	c53	M	4.92	4.66	5.16	5.07	4.72	4.29	4.46	1239	704	1080	2293	690	854	1036
D	c54	M	4.04	3.26	4.34	4.55	5.66	4.23	3.36	1066	514	1121	2809	616	657	745
D	c55	M	4.69	6.27	5.47	6.86	7.21	5.22	3.94	1180	575	1085	3174	957	778	1204
D	c56	F	4.42	5.01	5.07	6.6	7.2	4.35	3.81	1128	516	1102	3279	784	719	934
D	c57	M	4.32	4.91	4.99	5.85	6.75	4.3	3.97	1064	517	964	3217	836	757	968
D	c58	M	4.5	4.94	4.14	4.38	4.01	3.52	4.4	1127	590	890	2802	542	551	964
D	c59	F	3.49	3.57	4.35	4.64	5.98	3.94	3.13	977	482	985	3057	813	578	707
D	c60	F	4.41	3.56	4.09	4.06	6.54	4.58	3.76	1158	567	1226	3016	565	590	792
D	c61	F	4.8	4.26	5.02	5.53	6.44	4.92	3.99	1186	540	1207	3285	748	726	856
D	c62	F	4.82	4.24	4.5	4.43	5.06	3.91	3.95	1135	610	978	2156	659	599	794
D	c63	F	4.75	4.38	4.55	5.75	5.74	4.45	4.59	1133	612	1065	2749	738	605	897
D	c64	F	2.81	2.91	3.77	4.37	4.09	2.9	2.46	936	470	821	2262	675	572	711
D	c65	M	3.61	4.32	6.26	6.76	6.65	4.22	3.74	1012	593	999	3547	742	877	798
D	c66	F	5.44	5.26	5.72	6.31	7.71	5.13	5.38	1233	704	1179	3548	779	751	1047
D	c67	F	4.66	4.46	5.43	5.53	6.22	4.07	3.77	1170	539	792	3193	686	742	1002
D	c68	F	5.34	5.29	6.31	7.42	6.41	4.91	5.07	1120	567	1183	3035	1072	650	944

D	c69	M	4.65	4.64	4	4.16	4.84	4.15	4.25	1052	500	1059	1585	656	537	855
D	c70	M	5.28	6.12	7.57	5.98	5.12	5.15	5.42	1161	736	1411	2068	835	887	1224
D	c71	M	4.24	4.11	4.51	4.94	4.12	3.6	3.85	971	547	735	2709	606	716	955
D	c72	F	4.77	2.89	3.7	4.21	5.47	4.83	4.34	1045	562	1205	2496	642	468	579
D	c73	F	4.76	3.78	4.17	3.46	4.33	5.21	4.12	968	511	1023	2376	439	557	842
D	c74	M	4.03	4.2	4.53	5.52	5.04	4.59	3.7	1104	544	862	2614	1022	523	749
D	c75	M	5.35	5.43	4.51	2.85	2.14	3.65	4.94	1212	660	987	433	549	890	982
D	c76	F	5.98	5.22	5.63	6.46	6.73	5.43	4.79	1438	642	1358	3186	871	689	995
D	c77	F	3.57	3.46	3.74	4.65	5.44	3.92	2.82	970	443	938	3271	673	628	774
D	c78	F	6.43	5.44	5.33	5.8	6.59	6.44	6.91	1400	799	1474	2879	943	679	977
D	c79	F	5.87	5.85	5.32	5.78	4.42	4.95	5.61	1178	642	1212	1319	864	631	1114
D	c80	F	4.12	4.42	5.09	5.96	6.03	3.89	3.8	927	532	966	2570	819	612	916
D	c81	M	5.4	4.25	4.33	5.26	5.12	4.44	4.52	1301	631	1259	2141	749	602	893
D	c82	M	4.12	3.98	4.67	5.32	6.81	4.16	3.14	1148	359	1178	2984	799	612	925
D	c83	F	5.31	4.27	4.07	3.32	3.21	4.44	4.68	1391	657	1180	1900	371	617	938
D	c84	F	4.73	4.68	4.74	5.72	6.26	4.66	4.13	1117	571	1176	2710	757	680	980
D	c85	M	5.1	5.61	4.54	3.81	4.44	4.15	4.53	1110	545	990	2051	456	601	1149
D	c86	F	3.94	4.25	4.05	4.26	4.43	3.4	3.72	921	516	732	2972	383	709	881
D	c87	F	4.63	4.62	5.24	6.2	6.33	5.64	4.78	1028	585	1148	2696	864	589	864
D	c88	M	5.18	4.54	4.58	5.08	5.34	4.35	5.12	1179	671	1074	2605	634	648	825
D	c89	M	3.92	3.64	4.54	5.29	7.71	4.57	3.56	1035	586	989	4406	741	568	843
D	c90	M	3.6	4.1	4.91	6.3	6.62	3.78	2.79	856	430	984	3150	884	703	926
D	c91	F	4.26	3.96	3.51	4.06	6.23	4.32	3.81	1079	511	1139	2697	616	452	643

D	c92	F	4.56	3.91	3.46	4.8	5.25	4.05	3.12	930	388	1015	2743	644	622	967
D	c93	M	3.07	3.03	3.64	4.19	4.52	2.71	2.72	823	472	902	2557	620	618	760
D	c94	M	4.74	5.22	5.48	6.7	7.7	5.65	4.74	1189	688	1385	4142	856	709	1046
D	c95	M	4.66	4.21	4.21	6.33	7.27	4.82	4.34	1009	622	1007	3629	805	529	905
D	c96	F	4.82	4.43	4.53	3.87	3.19	3.78	4.34	847	467	1115	1833	445	592	770
D	c97	M	5.34	5.01	4.62	4.19	4.18	4.1	4.29	1284	652	904	2143	527	691	1104
D	c98	F	3.98	3.72	3.68	4.09	5.42	5.17	4.15	920	583	1121	2469	580	541	683
D	c99	F	3.95	3.97	4.22	3.31	3.08	4.25	4.42	902	533	1022	1759	508	601	772
D	c100	F	3.57	3.86	4.37	3.9	3.83	3.72	3.27	1058	492	1032	1326	583	697	851
D	c101	F	4.88	5.22	6.01	7.24	8.31	5.51	4.25	1090	577	1392	3987	853	802	923
D	c102	F	4.5	3.88	4.95	5.11	6.52	5.52	4.88	1002	735	1144	2977	654	701	914
D	c103	F	6.34	6.5	5.75	5.81	6.35	5.17	5.43	1383	703	1228	2908	791	697	1319
D	c104	M	6.38	6.16	6.23	5.15	5.98	5.83	6.21	1442	777	1211	2771	697	1021	1230
D	c105	M	4.79	4.53	4.39	5.89	6.41	4.35	3.92	1208	539	1219	3310	756	681	987
D	c106	M	4.26	3.54	4.5	4.97	6.49	4.07	4.13	1145	676	1055	3228	675	707	752
D	c107	M	5.92	4.58	4.93	5.47	7.8	5.4	5.24	1430	726	1441	4163	681	802	1048
D	c108	F	4.56	3.8	4.17	4.49	6.55	5	4.33	1070	555	1198	3216	568	611	778
D	c109	F	5.79	4.44	4.61	5.49	4.03	4.1	5.32	1212	625	1008	2135	748	667	948

D	c110	F	4.25	4.04	4.54	4.74	6.01	5.62	4.88	854	536	1462	2753	607	606	768
D	c111	M	3.61	3.24	3.31	4.5	5.84	3.39	3.35	1007	604	967	3356	824	563	754
D	c112	F	4.78	4.56	4.74	6.4	7.82	4.48	4.37	1031	723	1201	3446	722	690	858
D	c113	M	5.04	5.08	5.56	6.68	6.25	4.66	4.69	1225	577	1201	2514	881	692	943
D	c114	M	3.72	3.27	3.96	4.96	5.97	4.47	3.38	1041	601	1326	3558	676	625	801
D	c115	F	4.37	3.99	3.39	3.31	2.58	2.87	3.68	1068	594	523	1431	484	408	631
ND	c116	M	5.77	5.41	5.8	5.63	6.78	5.25	5.45	1483	668	1264	3220	677	817	993
ND	c117	F	5.7	5.14	5.14	5.26	5.11	4.9	5.12	1400	711	1125	2310	793	661	960
ND	c118	M	4.66	5.06	4.16	3.47	3.5	3.41	4.03	1068	666	744	2856	435	513	1031
ND	c119	F	5.68	5.77	5.33	6.83	7.81	5.51	5	1334	704	1123	3656	1017	645	1050
ND	c120	F	4.49	5.05	4.79	4.28	5.33	3.68	3.55	1113	554	918	2267	609	636	948
ND	c121	F	4.06	3.82	2.72	1.58	1.79	2.36	3.05	1029	522	394	660	478	488	657
ND	c122	F	5.34	5.4	5.44	5.91	5.47	5.19	5.22	1118	609	1186	2865	644	704	1063
ND	c123	F	4.94	3.68	4.75	5.14	6.79	4.05	4.18	1022	606	994	3411	810	568	831
ND	c124	F	4.52	4.87	5.66	5.11	5.65	4.69	4.52	1068	615	1004	3106	603	803	1060

ND	c125	F	4.72	4.42	4.31	4.75	6.12	4.29	4.38	986	500	1003	3186	498	681	962
ND	c126	M	4.5	4.82	5.93	6.8	7.66	4.81	4.44	922	542	1278	3521	949	756	1029
ND	c127	M	4.42	4.81	6.16	6.35	5.83	4.4	3.71	1243	648	1131	3098	962	917	1126
ND	c128	M	5.38	5.09	5.15	5.78	7.26	4.58	4.77	1269	747	1253	3468	750	767	1067
ND	c129	F	4.79	4.26	4.49	4.99	5.47	4.76	4.36	1162	611	1139	2580	762	559	822
ND	c130	F	4.66	5.53	5.78	5.53	5.08	4.36	4.42	1039	528	964	2431	615	787	1104
ND	c131	F	4.95	4.68	5.45	6.25	8.43	4.79	4.25	1346	580	1163	4251	822	824	1029
ND	c132	F	4.94	5.46	3.86	2.59	1.44	4.06	5.47	920	536	1205	440	572	458	867
ND	c133	M	5.97	6.05	5.89	6.47	7.01	5.32	5.38	1113	535	1385	2570	922	632	819
ND	c134	M	5.21	5.78	5.95	6.9	6.78	5.15	4.61	1282	633	1251	2859	1036	751	1293
ND	c135	F	3.44	2.58	2.73	3.64	5.51	3.76	3.02	1020	509	1057	3328	729	345	527
ND	c136	M	4.23	3.46	3.72	4.65	6.08	3.15	3.12	1066	523	1061	3059	597	585	841
ND	c137	M	5.17	4.41	5.31	6.07	6.38	5	4.54	1208	533	1399	2846	771	882	915
ND	c138	F	5.51	6.41	6.37	6.04	6.62	4.82	5.22	1761	738	1095	3252	736	777	1146
ND	c139	M	4.04	4.65	5.38	4.83	5.84	4.12	3.61	893	426	983	2821	625	789	933

ND	c140	F	4.57	3.98	4.8	6.16	7.15	5.24	4.02	1273	675	1326	4017	825	724	901
ND	c141	F	3.96	2.8	3.49	5.52	7.31	4.05	3.15	1130	518	1140	3916	779	578	673
ND	c142	M	5.97	5.63	5.61	7.65	8.84	5.03	4.93	1568	710	1273	4286	1115	794	1017
ND	c143	M	5.18	7.39	7.68	9.02	6.3	5.34	6.07	1337	902	1127	2436	1538	848	1226
ND	c144	M	7.26	5.94	6.74	8.43	7.75	6.05	6.17	1525	708	1445	3163	1269	746	1101
ND	c145	F	4.81	4.48	4.96	6.69	8.08	5.03	4.04	1262	660	1245	4374	980	768	1017
ND	c146	F	5.82	5.27	4.7	5.99	8.16	5.19	5.19	1418	757	1297	3639	903	669	1079
ND	c147	M	6.3	6	5.78	5.86	6.25	5.13	4.88	1251	659	1127	3113	677	740	1172
ND	c148	F	4.83	4.73	4.74	5.9	6.87	4.3	3.86	1259	499	987	3116	693	659	1001
ND	c149	M	4.75	3.66	4.25	5.16	5.06	4.09	3.33	1198	473	1103	2576	672	640	731
ND	c150	F	4.31	4.38	4.06	4.31	4.97	4.22	4.1	1091	609	1118	2195	688	534	945
ND	c151	F	5.59	5.53	5.31	5.67	7.33	5.57	4.97	1298	682	1203	3288	718	742	1018
ND	c152	M	3.41	2.88	3.47	4.02	6.05	3.54	2.95	1094	484	1328	3565	720	573	773
ND	c153	M	4.75	4.65	5.45	6.9	8.34	4.99	4.37	917	437	1525	3770	652	957	1199
ND	c154	M	5.93	5.87	6.09	5.73	5.53	4.56	5.04	1296	592	1147	2236	868	634	1082

ND	c155	F	4.93	5.66	4.92	5.1	6.42	4.7	4.27	1041	531	1138	3286	581	677	1169
ND	c156	M	4.57	4.36	4.8	5.62	6.69	4.44	3.92	1067	565	1198	3255	666	704	941
ND	c157	F	4.96	4.41	3.89	4.8	4.77	3.63	4.09	1066	493	1298	1497	827	548	901