Avens Publishing Group
J Neurol Psychol
October 2016 Vol.:4, Issue:2

Open Access **Case Report**

Journal of
Neurology and
Psychology

What is the function of the Brain? What does it do and how does it do it? It functions as a Neuroregulator, which continuously regulates the Autonomic Nervous System and Physiological Systems, and enables us to Recognise that Sleep Exhibits the Characteristics of a Neurally Regulated Physiological System

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Submission: 17 September, 2016
Accepted: 17 October, 2016
Published: 22 October, 2016

Keywords: Strannik; Strannik virtual scanning; Strannik light therapy; Human brain project; Autonomic nervous system; Physiological systems; Organ networks; Sleep

Abstract

The aim of this article is to provoke further discussion of the mechanisms which the brain uses to regulate the body's function, in particular the autonomic nervous system. It focuses upon an understanding of the structural relationship between the brain, organ networks (more commonly referred to as physiological systems), organs and cellular and molecular biology, brain and illustrates (i) that sleep exhibits the characteristics of a physiological system; (ii) that the brain uses colour and frequency to regulate the body's complex function; but also (iii) that brain function, including the processes involved in the fixation of memories, is influenced by the level of pathological onset arising from past experiences and/or stress.

Such understanding, incorporated into a mathematical model of the autonomic nervous system (developed by I.G. Grakov), has led to the development of Strannik software: Strannik Virtual Scanning & Strannik Light Therapy, and enables us to demonstrate that 'optimisation of sleep'is the purpose of a physiologically significant system or network of organs, which is regulated by the brain; that sleep performs a physiologically significant biological function, in particular that during sleep the brain produces hormones which are essential re the processes of recovery, regeneration and regulation; and that emergent pathologies in the various organs in this system, often due to the effect of the many and various stressors in our hyper indulgent and/or sedentary lives, influences quality and quantity of sleep.

Reported Case Studies illustrate the effectiveness of Strannik Virtual Scanning and Strannik Light Therapy to determine and treat the fundamental pathological origins and/or processes which contribute to, and/or are responsible for, sleep dysfunction.

In conclusion, the article illustrates what the brain does - it is a neural regulator of the autonomic nervous system and physiological systems; and how it does it - it uses frequency and light to regulate the body's complex biological function.

Abbreviations

SVS: Strannik Virtual Scanning; SLT: Strannik Light Therapy; ANS: Autonomic Nervous System; HBP: Human Brain Project; CNS: Central Nervous System

Quote

'*Higher-level control cannot be reduced to lower-level databases like the genome. A major part of the future of physiology surely lies in returning to our roots. Higher level systems biology is, I suggest, classical physiology by another name*'. Noble D.

Introduction

The existence of the Human Brain Project illustrates a recognition, or an acceptance, by the medico-scientific research communities that the brain receives and processes sensory input which influences the stable function of the autonomic nervous system and associated structures; that cognitive properties are influenced by pathological onset; and also that the brain functions at different levels of physiological significance [Note 1 and 2]. The issue therefore is no longer whether such mechanism(s) exist but instead what are the precise mechanisms involved and how can they be adapted with diagnostic and therapeutic effect, however there is an inconsistency by medical research to such phenomena. On the one hand there is recognition that there are physiological systems - network of organ networks - which are denoted through the use of appendices hyper and hypo function, and recognition that such systems form the fundamental basis of modern medicine, in particular, the doctor's examination (e.g. see Table 1). On the other hand the current

ISSN: 2332-3469

Table 1: Examples of physiological systems.

Hyperglycaemia	Hypoglycaemia
Hypertension	Hypotension
Hyperthermia	Hypothermia
Acidosis	Alkalosis
Hyperventilation	Hypoventilation
Hypersomnia	Hyposomnia

Table 2: The physiological system - regulation of optimum sleeping pattern - organs.

Brain	Nose
Ears	Spinal Cord
Pituitary Gland	Peripheral Nervous System

biomedical paradigm is based upon the measurement of biologically significant markers (biomarkers) and the use of pharmacologically active substances (drugs) - which act upon single biochemical processes - to alter the body's function and artificially enhance the longevity and quality of sleep however this excludes a comprehensive understanding of:

- The nature and significance of sleep;
- The influence which drugs have upon the quality of sleep;
- The function which sleep has upon the body's overall function; and
- Recognition that sleep dysfunction has complex multi-systemic, polygenomic, and complex phenotypic (lifestyle/environmental) origins.

It largely considers stress as a non - medical phenomena to be dealt with by psychologists or complementary medicine rather than considering the multi - level nature of brain function, and how stress influences the body's physiology and function. In addition, the idea has taken hold that it is possible 'to retrain the brain' and thereby improve the quality and/or quantity of sleep. Such techniques invariably involve some understanding of the significance of EEG frequencies (through meditation, neurofeedback, biofeedback, etc.) but are fundamentally experiential and lack a fundamental understanding of the scientific phenomena. As a result the level of success of such techniques is at a low level which understandably discourages their wider uptake. Some consider for example that changes of neural EEG frequency is a side-effect of pathological onset whilst others e.g. biofeedback researchers, recognise that applied EEG frequencies have the potential to alter biological processes and/or pathways [1,2]. Accordingly, there is a need for a more coherent hypothesis - to describe what the brain does and how it does it - which embraces the various observations, phenomena, etc.

Physiological Systems

The alternative way of describing these physiological systems, which varies slightly from the published and accepted description of physiological systems, is of organ systems which have physiological significance - each regulating physiologically important parameters e.g. body temperature, oxygen levels/breathing, heart rate, blood pressure, etc. These organ systems have physiological significance (hence the term 'physiological or functional systems') [Note 3] (see Table 1). They involve the coherent function of the various organ networks, often referred to as 'a network of organ networks' however this raises fundamental issues, in particular:

(i) How are these systems regulated? Biochemistry alone appears to be unable to explain the coherent function of these organ networks, and

(ii) If there are regulated systems what is the significance of the various biomedical and biophysical indices which we use to measure health? Are they the cause or the consequence of the failure of this regulatory mechanism?

(iii) What is the nature of the mechanism by which the body's function is altered by stress and by biological input?

Moreover, is it conceivable that the physiological systems are the physiological manifestations (genotype and phenotype) and correlates of the basic behavioural traits which preoccupy the human throughout his/her life i.e. our psychosomatic and somatic behaviours appears to be focused upon specific functional or executive outcomes: seeking sustenance (digestion, blood glucose, blood pressure, blood cell content, blood volume); sustaining optimum pO_2 at different altitudes (breathing); shelter, comfort and warmth (body temperature); maintaining the existence of the species (sexual function); elimination or excretion of body wastes; regulation of pH, posture and osmotic pressure (salt); and sleep.

In previous articles the author has illustrated that biochemistry alone is unable to explain the body's complex function [Note 4] e.g.

- If measuring the levels of a protein biomarker - how much of the protein is coiled and reactive? There must be a neural mechanism which regulates the body's pH and hence the coiled/uncoiled reactive/unreactive nature of protein functions [3].
- Stress is manifest as a spectrum of pathological correlates influencing the function of the brain and the normal levels of homeostasis associated with visceral function.
- Sports physiology involves an understanding that the brain continuously monitors and micro-manages the body's complex multi-systemic function and stability [4,5].

The only logical and comprehensive explanation for these observations is that the brain functions as a neural modulator which continuously governs and micro - manages the body's complex function i.e. that the biological entity which we commonly refer to as 'the brain' is a biophysical entity which has the essential purpose of (i) receiving multi-sensory input, (ii) storing memories, (iii) comparing incoming sensory data with stored memories, (iv) making continuous adjustments to sensory output (behaviour) in order to maintain the body's stable and regulated function, (v) continuously

Note 1: https://www.humanbrainproject.eu

Note 2: http://www.scientificamerican.com/article/what-is-the-function-of-t-1997-12-22/

Note 3: http://merckbooks.com/mmanual/index.html

ISSN: 2332-3469

regulating the stable function of the organ networks whilst receiving different levels and/or forms of different biological input (in the form of food, water/drink, air/gravity/altitude, drugs, pH, etc); and (vi) that this mechanism is regulated and/or influenced bythe combined effect of sensory input and EEG frequencies [6].

1. Light is the most significant sensory medium because it comprises an estimated 85% of sensory input and acts upon the sympathetic and parasympathetic nervous system(s).

2. The EEG frequencies have somatic and psychosomatic significance. The delta and theta frequencies function throughout the 24 hour cycle and must therefore be associated with the body's continuous 24 hour function (somatic) whereas the gamma, beta and alpha frequencies function mainly during periods of wakenedness (psychosomatic).

Preliminary research has illustrated that, of the psychosomatic frequencies….

- The gamma frequency is associated with predictive function and/or subliminal imaging;
- The beta frequency is associated with physical function and sense perception; and
- The alpha frequency is associated with coherent patterns of behaviour i.e. thought and learning. Each functions independently of the other yet influences and is influenced by the other frequency ranges.

By contrast, of the somatic frequencies….

- The theta frequencies are associated with pain, photo-sensitivity, and fixation of memories [7,8]; and
- The delta frequency is associated with sleep (the majority of sleep is in the delta frequency state) and in periods of physiological damage e.g. in the comatose state when the brain shuts down all peripheral activity and focuses upon the delta frequency/state [8,9].

This indicates that pathological onset (influencing the genetic expression of proteins (genotype) and protein reactivity (phenotype) occurs at a much earlier stage than can currently be determined by the currently available plethora of analytical/diagnostic techniques.

Sleep is a Physiological System

The author has previously presented papers which illustrate that blood pressure, blood glucose and pH exhibit the hallmarks of neurally regulated physiological systems. Sleep also exhibits the hallmarks of a neurally regulated physiological system i.e. it involves the coherent function of a network of organs; however, as outlined above, more than 50% of the deepest stage 4 sleep takes place in the delta state of a healthy patient. This illustrates the immense physiological significance and importance of the delta frequency e.g.

- During sleep, in a healthy patient, the theta and delta frequencies function in a coherent and apparently coordinated manner however, when under stress, the coherent function of theta and delta frequencies can be significantly destabilised [7-9].

Note 4: http://www.pbs.org/wgbh/nova/genome/deco_lander.html

- When awake, the beta and alpha frequencies generally function in a coherent manner. Logical behaviour is dependent upon the coordinated function of the different frequency bands however, when under stress, the coherent function of the beta and alpha frequency bands may become stabilised and the patient's actions less logical. If the person undertakes less physically active tasks e.g. playing computer games, the beta frequency band becomes less significant and the alpha band becomes more significant.
- Memories which are experienced in beta and alpha frequencies are fixed in the theta, and perhaps also the delta, band by the process of LTP. The greater the severity of stress - whether it is experienced as psychological stress, pain, or as damage or degeneration - illustrates the existence of a structured relationship between the psychosomatic and somatic states and between the different EEG frequencies i.e. that each EEG frequency band complements adjacent frequency bands and hence has differing levels of physiological significance [8]. Stress influences the quality and quantity of sleep and the fixation and recall of memories.

During sleep the body recovers more speedily and effectively from illness and injury however there is lack of agreement why this is so i.e. is the increased speed of recovery due to the period of rest which accompanies sleep or is it due to stimulation of processes which are responsible for illness and/or injury? The latter option appears to be the more compelling of the two options [10]. During sleep there is greater production of Human Growth Hormone (HGH), prolactin, melatonin (an effective free radical scavenger), and Thyroid Stimulating Hormone (TSH) by the pituitary and pineal glands. The production of HGH assists in the process of recovery from injury; the production of melatonin suppresses the activity of free radicals; and the production of TSH stimulates thyroid and pituitary function and metabolic rate [11-13]. Moreover, both the pituitary and pineal glands are light-sensitive and respond to sensory input [14].

In cases of severe or extreme neural trauma e.g. in the comatose state, there is significantly greater periods spent in delta frequency which indicates that the sleep state acts to protect the brain and stimulate or elevate immune function and normal patterns and/or processes of repair, recovery and regeneration [15]. Moreover in such cases the vast majority of sleep can be in delta sleep which indicates that it is a significantly more important state than that of the other frequency bands. Finally, applied frequency/delta sleep (as SLT) has been illustrated to have a significant therapeutic effect [16].

Grakov's description of the physiological systems considers skin as an organ, which participates in the physiological system 'optimisation of body temperature' [Note 5]. It does not consider skin to be a system. It does not make allowance for an immune 'system' but instead considers that immune 'function' is provided by the coherent inter-relationship between different the different physiological systems and organs (spleen, thymus, musculoskeletal, thyroid gland, pituitary gland) which act in a concerted manner to optimise normal function and produce immunoglobulins, cytokines, neutrophils, etc.

It appears reasonable to conclude therefore that changes of EEG frequency appear to be associated with different levels of cell function:

- The delta frequency in particular being associated with the coherent function of the physiological systems and organs and, in

ISSN: 2332-3469

particular with damage or degeneration.

- The theta frequencies with cellular damage.
- The alpha frequencies with cellular dysfunction arising from significant levels (frequency or magnitude) of multi-sensory input (psychological stress).
- The beta frequencies are associated with basic sensory input,data collection and/or perception, and
- The gamma frequencies, often associated with subliminal imaging, with predictive significance.

It indicates that the EEG frequencies function at differing levels of physiological significance but also that behavioural or psychosomatic traits would be expected to respond to applied theta or delta frequencies but not vice versa. This is immensely significant for the learning process because it illustrates that pathological onset e.g. arising from genetic or phenotypic (stress-related) factors, alters the fixation of memories but conversely that an understanding of this phenomenon can be used to influence/alter/adjust the neural frequency bands and thereby improve the conditions supporting sense perception and fixation of memories.

It is reasonable to consider therefore that sleep is a physiological system which comprises a network of organs which has the purpose of 'assimilating into the neural program information which has been absorbed during the day; preparing the controlling programme for the next day of activity; checking the condition of organs and tissues; and correcting the controlling signals which stimulate the production of hormones'.

Grakov has identified the nature and significance of the autonomic nervous system and physiological systems, in particular the organs which are part of each physiological system. As an example, the sleep system comprises the following organs (Table 2), and that emergent pathologies (which may be genetic or phenotypic or a combination of both) in any of these organs e.g. nasal problems affecting breathing, hearing problems, spinal cord damage, pituitary problems, and the peripheral nervous system, can be expected to directly influence the quality and quantity of sleep [17]. This is immensely significant in cases where impaired sleep is a common symptom e.g. of stress, depression, Alzheimer's disease, etc [18-24]. A lack of adequate quality or quantity of sleep is associated with a plethora of medical conditions e.g. diabetes, cardiovascular disease, cancer(s), etc [25-27].

It is reasonable to conclude therefore that sleep dysfunction contributes to pathological onset, primarily in the visceral organs, and hence must alter or influence autonomic stability; and that such alterations must have biochemical origins e.g. due to variations of (i) the levels of proteins and/or other biologically significant moieties such as fatty acids, nucleosides, minerals and vitamins; (ii) theprevailing reaction conditions which influence the rate and completeness of such genetic and phenotypic reactions and pathological onset/outcomes e.g. temperature, acidity, levels of minerals; (iii) the levels of thyroid, pituitary or adrenal hormones; and/or (iv) the precise way which stress acts upon the body to produce a spectrum of pathological correlates/metabolites [28].

Note 5: www.montaguehealthcare.co.uk/OperatingManual.pdf

It supports the contention that sleep has biochemical/pathological significance and that it plays a fundamental role eliminating the body of toxins or pathological metabolites which accumulate during periods of physical activity or inactivity, consolidating memories, elevating the production of immunochemicals, and perhaps also changing the way in which memories of different levels of significance are stored [29].

Sleep has an anti-inflammatory role upon cell function which assists the body's natural eliminatory process(es), mainly via the urinary tract and lymphatic ducts, to eliminate toxins and thereby optimise normal cell function [11,12]. This is supported by noting that the brain shrinks in size during periods of sleep [30].

It offers a viable explanation for the many and various drug side-effects arising from use of benzodiazepines, zopiclone, and other drugs which are often used to treat hypersomnia (apnoea) or hyposomnia (insomnia) e.g. blurred vision, incontinence, dry mouth, constipation, drowsiness, instability, osteoporosis, heartburn, etc.

It explains why common approaches adopted by the medical profession included stressing/teach relaxation/yoga/meditation, and 'retraining the brain' into more acceptable or typical sleep patterns.

The recognition that immune 'function' is provided by the coherent inter-relationship between different the different physiological systems and organs; which act in a concerted manner to optimise normal function and produce immunoglobulins, cytokines, neutrophils; is intriguing because an investigational study compiled by Zhuravleva TN and Komarova IA of the Laboratory of Molecular Cosmetology (Mirra-Lux-Ltd, Moscow) illustrated that SLT (see section 4) was able to stimulate the immune response in 34 patients as follows:

Intention of the study: Number of patients: 34 (17 male and 17 female within 17-60 yrs)

1. To investigate blood content and immune status using contemporary diagnostic tests.
2. To carry our correctional therapy using Strannik Light Therapy (SLT).
3. To check immune status using contemporary diagnostic tests.
4. To check/compare initial SVS results before and after correctional therapy

Results

1. The level of immunoglobulins IgG, IgA, IgM determined using the Mancini technique was within the normal reference range for all patients
2. The total lymphocytes was within the normal reference range at the first investigation but increased by circa 50% after correctional therapy (SLT).

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3. Phagocytosis activity of neutrophils was within normal limits at the first investigation (1.42) and increased by 10% (1.53) after correctional therapy (SLT).

4. The level of neutrophil lysosomal-cationic proteins identifying non-enzymatic bactericidal activity of granulocytes, determined using Shubitch MG method: at the first investigation average cytochemical coefficient (ACC) was at a low level of 1.35. After correctional therapy (SLT) this increased to a level of 1.61 which was within the normal reference range 1.50-1.70.

5. The level of lymphocytes was measured by an indirect fluorescence staining immunoassay method using monoclonal antibodies. Each patient had CD3, CD4 and CD16 levels within the normal reference range before and after correctional therapy (SLT) although slightly elevated after correctional therapy.

6. Patients reported, following correctional therapy (SLT), lower levels of tiredness, improved health and resistance to viral infection. Patients with high blood pressure (4) stabilised their blood pressure at normal age-related levels and reported improved sleeping patterns.

In addition the author reports two case studies which illustrate how Strannik Virtual Scanning (SVS) technology has been able to determine the onset and progression of immune-related pathologies and how such conditions have responded to correctional therapy (SLT):

Case study 1

In a patient who had required a bone marrow transplant as a result of chemotherapy treatment for her acute myeloblastic anaemia, the patient was tested by contemporary diagnostic tests which concluded that the patient's condition was normal however SVS identified the likely reoccurrence of such a condition which was reconfirmed at the patient's following medical condition. SVS was able to determine the condition earlier than contemporary diagnostic tests.

Case study 2

In an elderly patient with thrombocytopenia/atypical leucaemia, his thrombocyte count rose during a course of correctional therapy (SLT) from circa 60,000 to circa 125,000 platelets per micro liter of blood over a period of circa 2 months. The normal reference range is 150,000 to 450,000 platelets per micro liter of circulating blood.

Strannik Software

Strannik software is the first of a new generation of medical technology to meet the key aims and objectives of the Human Brain Project. It arose out of fundamental research into the medical application of industrial lasers by the brilliant researcher Dr. Igor Gennadyevich Grakov and culminated in an understanding of the fundamental mechanism which has been adopted by the brain to regulate the body's function. It comprises Strannik Virtual Scanning (SVS) and Strannik Light Therapy (SLT).

Strannik virtual scanning

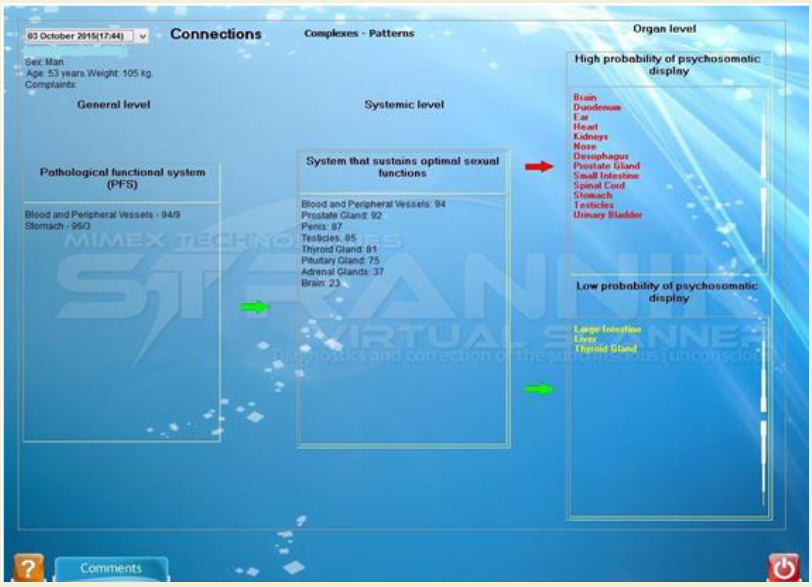

Figure 1: Systemic report.

Note 1: Figure 1 identifies that in this patient optimum sexual function is the most destabilised physiological system; that a pathological functional system comprising brain, blood and peripheral blood vessels and stomach is prevalent; and that the most destabilised organs are blood and peripheral blood vessels (94 units), prostate gland (92 units), penis (87 units), Testicles (85 units) and the thyroid, pituitary and adrenal glands.

Citation: Citation: Ewing G. What is the function of the Brain? What does it do and how does it do it? It functions as a Neuroregulator, which continuously regulates the Autonomic Nervous System and Physiological Systems, and enables us to Recognise that Sleep Exhibits the Characteristics of a Neurally Regulated Physiological System. J Neurol Psychol. 2016; 4(2): 9.

ISSN: 2332-3469

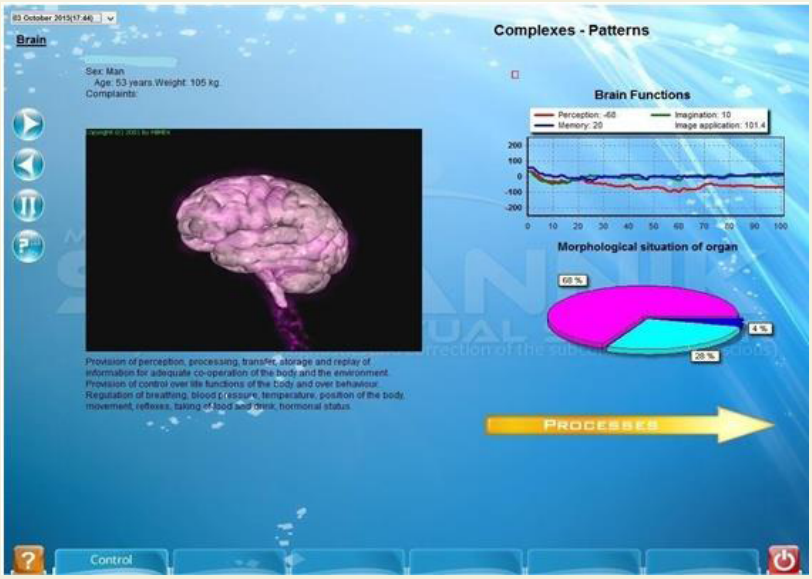

Figure 2: Cellular report.

Note 1: Figure 2 illustrates through a system of colour vectors highlighting each organ and the morphological pie chart the various morphologies which are present in the organ e.g. process that supports the development of connective tissues, functions acceleration (cell hyperfunction), functions deceleration (cell hypofunction), old cells, new cell growth, etc.

SVS is able to screen the health of the patient in an apparently extraordinary level of detail i.e. at the level of the physiological systems determining the most destabilised physiological systems, at the organ level determining the most destabilised organs, at the cellular level determine the extent of cellular change which is significant in cancer screening, and at the molecular or pathological level where the technique can determine the extent of the genetic and phenotypic processes in each emergent pathological process (typically 15 pathologies per organ in circa 30 organs) (see Figures 1-3).

Initial research has illustrated how SVS is able to determine the complex pathological correlates which are present in patients with diabetes, cardiovascular disease, depression, Alzheimer's disease, Raynaud's phenomenon, etc [31-35]. The reported results are consistent with prevailing observations which indicates that the technique performs at a high level of accuracy, perhaps more accurately than contemporary diagnostic tests [16]. It is able to determine pathological onset at differing levels of physiological significance e.g. at the level of physiological systems, organs, cellular biology and molecular biology (see Figures 1-3). Moreover this data can be used to calculate the precise parameters of a course of SLT.

Strannik light therapy

The knowledge, embodied in SLT, of how the brain deploys light and frequency in order to regulate the body's function has largely baffled and defeated researchers. There is some degree of understanding of the phenomena but not an in - depth level of knowledge. Accordingly the results obtained by the many and various techniques, which are based on limited levels of understanding, are often less than claimed or expected thereby leading to doubts over the significance of the phenomena and occasionally allegations of impropriety. By comparison, SLT is the first technology to be based upon a precise understanding, embodied in a mathematical model, enabling accurate selection of the therapeutic parameters.

Initial research suggests that SLT performs at circa 83-96% effectiveness depending upon the nature and extent of the morbidities to be treated [16]. Such levels of reported effectiveness appear consistent with an estimated 4-17% of patients with genetic conditions, or physical damage or degeneration, which would not be expected to respond to a therapy which is based upon correcting autonomic dysfunction.

Case Studies

SVS has proven to be an extremely effective way of determining the physiological systems which are most dysfunctional in patients e.g. it routinely identifies when patients have poor levels of sleep, have problems with blood pressure or blood glucose, etc.

- Initial research has indicated that SVS appears to function at a level which is typically 2-23% more accurate than the entire range of contemporary diagnostic tests in use at the various hospitals which have evaluated the technology and against which it was compared e.g. a demonstration to the Medical Director of Nottingham's Queens Medical Center in 2003 illustrated how the technology was able to determine, precisely, the range of 5-6 ailments of concern to the selected test patient. The MD commented that the entire QMC did not have the capability to perform at this level.

Studies from Russian clinicians, non-clinical and a recently completed clinical study (to be reported in a future paper/meta-analysis) support the above claims for the technology [16,36].

- As outlined earlier, initial research has indicated that SLT appears to function at a level which is typically 83-96% effective

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ISSN: 2332-3469

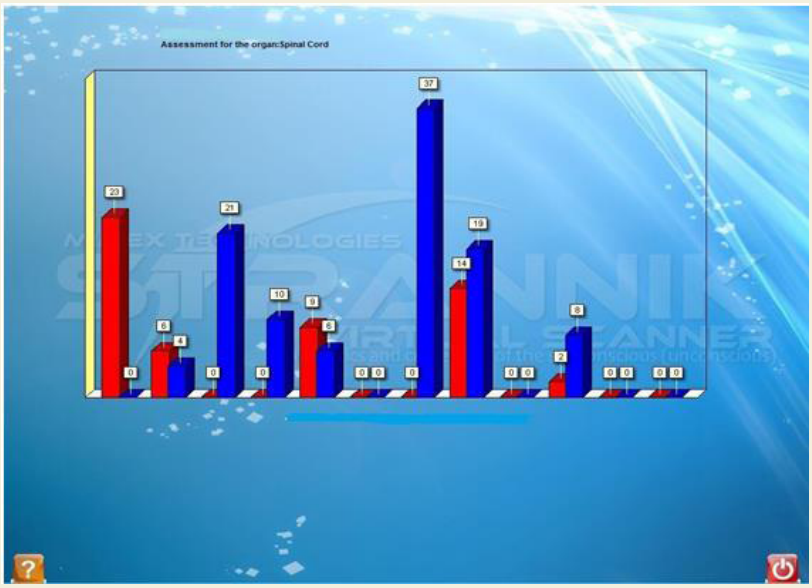

Figure 3: Pathological report.

Note 1: Figure 3 reports the precise pathologies which are present in each organ. Each pathology is defined in terms of its genotype (in blue) and its phenotype (in red). The numbers are significant - from 0 - 10 units are considered to be at the presymptomatic level whilst numbers above 10 units are symptomatic. In this patient

Spinal Arachnoiditis	19 g/14 p
Impaired Spinal Circulation	6 g/9 g
Myelitis	0 g/23 p

It indicates (i) the presence of a degenerative process (Arachnoiditis) and (ii) the presence of recent activity which has caused inflammation of the spinal cord (Myelitis).

treating 30 different categories of common ailments. Case Studies recorded by Mimex Montague Healthcare support such claims that the technology works at this general level of effectiveness - it treats or corrects autonomic dysfunction - but that the calculation of outcome of effectiveness following treatment will ultimately depend upon the precise nature of the conditions to be treated. SLT has not proven to be effective when used to treat Chronic Fatigue Syndrome which suggests that this medical condition has genetic origins, perhaps resulting from a viral infection.

The following Case Studies 3 - 5 illustrate the effectiveness of SLT as a likely therapeutic modality for the treatment of sleeping disorders:

Case study 3: Female, circa 60 years, retired senior nursing officer/matron; insomniac, completely unable to sleep following an operation to remove a brain tumour several years previously. After 1 - 2 weeks of SLT she phoned to enquire whether sleeping 12-14 hours per day was normal.

Case study 4: Male, circa 60 years; with sleep apnoea, being treated with oxygen, falling asleep throughout the day; was successfully treated with SLT over several months to the extent that his specialist advised during a routine follow-up consultation that the patient no longer suffered from sleep apnoea.

Case study 5: Male, circa 60 years; periodically experiences lack of sleep and/or disruption to sleeping patterns, in particular the ability to fall asleep, to remain asleep throughout the night, and/or sleep for 8 hours. Problem associated with stress which was linked to business issues. Routinely uses SLT to deal with the problem.

Further case studies outlining the effectiveness of SLT are listed on the company's web site www.montaguehealthcare.co.uk.

Discussion

The author reports that disorders of the physiological system 'optimum sleeping pattern' responds exceptionally well to SLT with circa 100% outcomes in patients treated since 2003. Sleep dysfunction is a commonly observed phenomena in patients with stress; and/or abnormalities of, or damage to, or degeneration of the brain, spinal cord, and adrenal gland. Sleep dysfunction due to damage or degeneration may respond favourably to a course of SLT but eradication of the symptom, and complete recovery of normal sleeping patterns, depends upon the physiological origins of the condition.

It highlights the dynamic relationship between the function of the brain to regulate the autonomic nervous system and stable and coherent function of the organ networks; and the various factors, such as stress or pathological onset, which influence this dynamic relationship.

The hypothesis outlined in this paper - that the brain regulates the body's function - is supported by issues/observations identified

ISSN: 2332-3469

by many eminent and immensely respected researchers e.g. Lander [Note 6], Brenner, Kandel, Noble, etc [37-39]; for a comprehensive understanding of how the body functions……..

• 'We have the parts list but need the operating manual' (Lander [Note 6]).

• 'Top-down, bottom-up, middle-out' (Brenner [37]).

• The need to consider and/or incorporate sensory input in research studies alongside biomedical research (Kandel [38]).

• 'Linking molecular biology, cellular biology, organ function and system function' (Noble [37,39]).

and which incorporates an understanding of the relationship between the function of the brain, the central nervous system, and autonomic nervous system e.g. in multiple sclerosis, Parkinsonism, etc. The almost instantaneous response of the CNS needs to be supported by a comprehensive mobilisation of the body's resources i.e. which is provided by the brain and/or the autonomic nervous system.

The authors, in this and other published papers, point out the limitations of the prevailing medical paradigm which (i) seeks to identify a single pathological process as the fundamental cause of a medical condition and then to treat this single pathological process with a drug which blocks or otherwise acts to modulate the effect of the emergent pathological process i.e. by effectively acting against the neural regulation of system function; (ii) to ignore that stress is primarily experienced through multi-sensory input, at different levels of physiological significance, and is ultimately manifest as a complex spectrum of pathological correlates; and (iii) that the body's function is neurally regulated and acts to compensate for sensory and biological input.

This illustrates that pathological onset is the consequence of neural dysfunction which influences the stable and coherent function of the organ networks; that stress in its many and various guises is often (estimated 80-90%)the fundamental cause of the problem; and finally that the brain uses applied frequencies to re-establish normal levels of brain function, including the learning process.

Such a hypothesis meets the primary aims and objectives of the Human Brain Project i.e. (i) to identify what the brain does and how it does it, (ii) to adapt this knowledge to develop a new generation of cognitively-based diagnostic techniques which are able to determine the pathological correlates of complex conditions such as Alzheimer's disease, and (iii) to understand and adapt with therapeutic effect a multi-level understanding of how the brain functions.

Note 6: http://www.pbs.org/wgbh/nova/genome/deco_lander.html

Conflict of Interest

Graham Ewing is Chief Executive Officer, Mimex Montague Healthcare which has the sole purpose of commercialising Strannik technology.

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Citation: Citation: Ewing G. What is the function of the Brain? What does it do and how does it do it? It functions as a Neuroregulator, which continuously regulates the Autonomic Nervous System and Physiological Systems, and enables us to Recognise that Sleep Exhibits the Characteristics of a Neurally Regulated Physiological System. J Neurol Psychol. 2016; 4(2): 9.

ISSN: 2332-3469

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Acknowledgements

The author wishes to thank the many researchers who through their research have indirectly contributed to this paper.