



Strannik

Strannik Technology meets the objectives of the Human Brain Project for a unified, multi-level understanding of how the human brain integrates the flow of pathological data from the viscera - in other words how the brain regulates the body's function. It comprises two basic elements: Strannik Virtual Scanning (a medical screening technology) and Strannik Light Therapy (a unique form of Light Therapy).

It is the first medical technology to incorporate an understanding of how the brain regulates the body's function. It does so by using advanced mathematical modelling to better understand how the brain regulates the body's function and incorporates such understanding into the diagnosis and treatment of common life-style related morbidities.

It is a screening technology which is able to determine all common pathologies in a single test of 20 minutes duration. Initial studies have indicated that it is 2-23% more precise than contemporary methods of diagnosis. Using the data derived from this test we are able to determine the precise parameters of a Light-based Biofeedback therapy. Initial studies have illustrated that our Strannik Light Therapy treats autonomic dysfunction and that across a wide range of medical indications it is typically 83-96% effective.

The following brochure outlines why Strannik technology is an immensely significant world-leading technology.

Background

The governments of the world are increasingly challenged by the ever-increasing cost of healthcare which, if it continues to increase at expected rates, will have a devastating effect upon every government's ability to regulate their nation's finances and deliver better standards of living. Already the largest single % of expenditure by most governments, spending on healthcare continues to increase due to the increasing cost of diagnosing and treating e.g. diabetes, cardiovascular disease(s), cancers, dementia, alzheimer's disease, regressive autism, developmental dyslexia, etc; yet despite the massive investment in healthcare there are no rapid solutions.

Medical research is unable to offer cures for any of these lifestyle-related conditions. The solutions which are offered, of yet more tests and yet more drugs (which are 25-80% effective depending upon the condition to be treated), deal only with the consequences of dysfunction and not the fundamental cause. They fail to resolve the problem and lead to yet more side-effects. Every new test or drug adds to the complexity and cost of providing healthcare which is ultimately borne by the taxpayer and those in the wealth generating industries. As a result the cost of healthcare keeps rising.

The western medical paradigm is based upon the assumption that a single biochemical marker or gene can be used as a determinant for a particular pathological condition and that drugs can be used to treat such medical condition(s) however most diseases have complex, multi-systemic and/or polygenic origins. Furthermore most drugs treat only one pathological process i.e. the major symptom of dysfunction, and rarely result in a complete cessation of the symptoms or 'cure'. Accordingly there is a need to recognise the limitations of the current healthcare paradigm i.e. the worldwide shortage of doctors; limitations of the doctor's training and/or abilities, the medical tests used by the doctor, the medical devices which are used to diagnose and treat disease, the drugs which are used to treat disease or morbidities; and to better understand the function of the autonomic nervous system. In particular, there is a need to have a greater understanding of the relationship between brain function, the autonomic nervous system, systems biology, cell biology, genomics, proteomics and metabolomics.

The new medical technologies which have been developed are based primarily upon the perceived ability to introduce technology(s) which can produce profits for the manufacturer in a high-profit market which has relatively low levels of direct competition. The market has become anti-competitive. It is for these reasons that we have witnessed recent changes in legislation in the UK and US i.e. to stimulate competitiveness and innovation in the healthcare system.

Originally the role of the GP was designed to diagnose and treat disease however the requirement for much more comprehensive diagnoses has resulted in the emergence of the current medical paradigm in which there is a multi-tiered approach involving primary care,

secondary care, histopathological testing, and tertiary care. It is for this reason that there is a large range of pathology laboratories yet most medical tests have an accuracy which ranges between 25-90%, and drugs are circa 50% effective i.e. circa 50% of the disease process is not being considered in the prevailing medical paradigm. The influence of nutrition and drugs upon the body's function is considered but the influence of stress upon our physiology is largely ignored, perhaps because it is considered to be too complex to be addressed by the contemporary biomedical paradigm i.e. it does not conform to the prevailing biomedical paradigm which involves the supply of drugs. Every new medical technology adds to the cost and complexity of the healthcare system. Perhaps the issue is best summarised by Nobel Laureate Eric Kandel who has recognised that there is a theoretical deficit between cognition and cellular & molecular biology i.e. that our many, various and multi-level experiences influence our health.

Despite the immense increases in the occurrence of obesity, most of us remain physically active, have a balanced diet and are not significantly overweight; however the cost of caring for those who have an unhealthy lifestyle, and who subsequently need more of the available healthcare resource, is being borne by the healthy. Consequently there is a need to recognise the mechanisms which the brain uses to regulate the body's function.

It is widely appreciated that the secondary care environment is hugely expensive. Also, there is greater potential for patients to contract life-threatening infections during their hospital visits. Other problems include misdiagnosis, erroneous prescribing of drugs, drug side-effects, unnecessary surgical procedures, etc. In addition, many medical conditions are poorly defined and some conditions are considered to be untreatable. Accordingly most technologies which can improve the treatment of patient in primary care are being encouraged by government.

There is a need for a more enlightened approach which recognises the natural mechanisms which, at least in the healthy, the brain uses to regulate the body's function i.e. the neural regulation of the ANS.

The introduction of a comprehensive cost-effective screening technology could, in principle:

- prevent or reduce the flow of patients into the healthcare system.
- reduce the immense cost and complexity of training the GP.
- reduce and/or avoid doctor errors.
- improve the accuracy of drug prescribing thereby avoiding erroneous drug prescribing; reducing the need for drugs; or for drugs to treat the side-effects of other drugs.

- reduce the high level of expenditure in secondary care e.g. the diagnosis and treatment of diabetes, cardiology, cancers; and increase the level of cash which is available for primary care, nurses and in-home care.
- reduce the need for highly expensive scans and tests. The majority of tests are designed to identify the precise nature of the condition which is affecting the patient's health. The introduction of a cost-effective screening technology would reduce or eliminate the number of tests which yield a negative result. Pathological, histological and scanning tests would, if necessary, confirm the results from the screening technology.
- reduce the expenditure on equipment and increase the cash which is available to support biomedical treatments and recovery.
- increase the ability for everyone to have a clear understanding of their health and to assume control and responsibility for their health i.e. give people a clear understanding of the influence which their lifestyle is having on their health and how this is likely to be manifest in future.
- change the focus of medicine re lifestyle issues; from treating the symptoms of disease and morbidity to that of treating the fundamental cause of disease and morbidity.
- provide the patient with a written report of their health which they could use to seek out alternative therapeutic options which are not available in their local health services
- reduce the overall cost of healthcare, especially so in the financially challenged markets e.g. which are affected by the current financial crisis or where the per capita income is not sufficient to afford 'western healthcare'.

The health service should be designed to serve the patient. This contrasts with the current system (identified by Sir Robert Francis QC) in which the patient provides the service with throughput.

Providing a solution/How it Works.

The brain processes sensory input and stores these experiences as memories. Extremes of sensory input, which we experience as stress, influence the autonomic nervous system. We can use colour to influence the function of the autonomic nervous system e.g. red stimulates the sympathetic nervous system and raises heart rate whilst green stimulates the parasympathetic nervous system and slows heart rate. This illustrates that perception of colour is linked to the function of the autonomic nervous system.

In addition, most medical conditions, diseases, drugs and vaccines influence our colour perception. They too influence the stability of the autonomic nervous system. Accordingly changes to colour perception must be markers for the pathologies which are characteristic of various medical conditions, and which are caused by diet, diseases, drugs, vaccines, etc. For example how the occurrence of diabetes is accompanied by changes to blue-yellow colour perception.

The prevailing healthcare model or paradigm has yet to explain why we remain healthy and why we develop morbidities. It has yet to explain the influence of nutrition, viruses, vaccines, and drugs upon the body's regulated function. Every drug depends upon the autonomic nervous system for its effect therefore the solution must depend upon understanding in greater detail how the brain regulates the autonomic nervous system i.e. how proteins are genetically expressed, how these expressed proteins and/or other bioactive materials subsequently react with their reactive substrates, and how the bioluminescence of such reactions influences the normal spectrum and intensity of colour perception.

The Russian researcher I.G.Grakov has mathematically modelled the autonomic nervous system. It uses measurements of colour perception as the data sets for the model and links molecular biology, cellular biology, the function of the organs and organ networks (the physiological or functional systems) to the function of the brain. As outlined earlier, changes at the cellular & molecular level induce changes to colour perception. Consequently a cognitive test can be used to provide the data sets for Grakov's mathematical model.

The consequence is a test which can determine or screen for the emergence and progression of pathologies from the earliest pre-symptomatic origins. Moreover as the model links molecular biology, cellular biology, the function of the organs and organ networks then so too must it diagnose at these levels, and it does so in Strannik technology i.e. **Strannik Virtual Scanning (SVS)**. A comparison of the results from a series of in-market studies illustrates that the technology is 2-23% more accurate than a range of medical technologies which were used to confirm the patient's medical conditions. See example report in figure 1.

Such a model can be used predictively to illustrate to patients what will happen to them if they continue with their current unhealthy lifestyle(s). This has immense value because an estimated 90% of morbidities are considered preventable i.e. they are the consequence of poor lifestyles.

This technology also has therapeutic potential. The recognition of the pathological profile or health report can be used to determine the precise parameters of a Biofeedback-type light therapy i.e. **Strannik Light Therapy (SLT)** which eminent Russian researchers have claimed is 83-96% effective in five studies involving several thousand patients.

What is Virtual Scanning technology and How Does it Work?

The technology is split into three or four parts which comprise the test, the processing of the test results by the server and the provision of the test results, the selection of the light therapy, and the provision of the biofeedback type light therapy.



The test is a games-like procedure which requires the patient to study and memorise a selection of colours in the computer-based test. At the end of 15 seconds the colour selection is altered by the imposition of a colour filter. The task for the patient is to use the mouse to select colours from the colour palette and to re-establish, to the best of their abilities, the original colour balance. The test takes typically 2-3 minutes and is repeated abt 4-5 times with different colour selections.

Upon completion of the test the patient is provided with the test results or alternatively the therapy programme which should be installed on their home computer. Their therapy involves watching the computer programme, a selection of flashing lights, for circa 1-2 * 20 minute sessions each day.

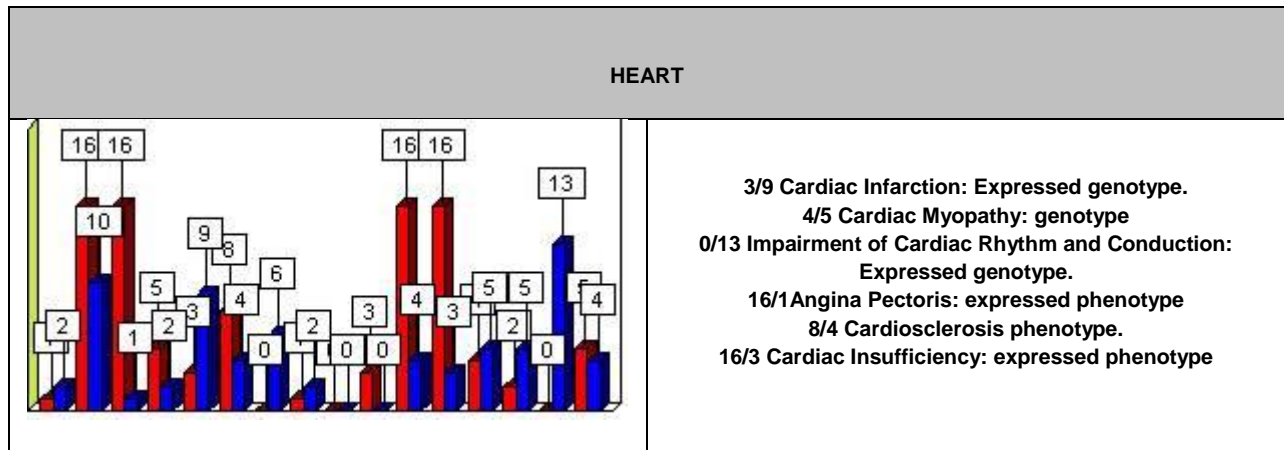
A selection of demonstration videos is available on www.montague-diagnostics.co.uk. See also the Operating Manual (www.montaguehealthcare.co.uk)

What Proof is there that this Technology is Effective as Claimed?

Initial indications are that this technology is able to determine the onset of pathologies in a level of detail which is unprecedented in modern medicine. The technology has been evaluated by many medical researchers (reports available upon request). A report compiled at the behest of the Russian parliament THE DUMA by Vysochin et al at the University of St Petersburg indicated that this test was circa 21% more accurate, across a range of pathologies, than the current range of medical techniques which were available in medical clinics, thereby justifying the claim that it could determine the onset of pathologies from the presymptomatic level; and that as a therapy it was 93.2% effective.

An extensive range of case studies are available upon request which document how this technology has been used to diagnose and treat a wide range of medical conditions. Testimonials are available upon request which illustrate that the technology has performed at a level which is more advanced than that of contemporary biomedicine. An extensive range of articles, book chapters, and books

Figure 1



illustrates the scientific rationale for the technology i.e. which has have been reported in a book and subsequent peer-reviewed articles. Some of these conclusions have subsequently been confirmed by medical researchers e.g. (i) that depression is accompanied by the onset of cardiac pathologies, and epilepsy and migraine have common genetic origins. (ii) The diagnostic conclusions made with SVS are consistent with the results of other researchers. (iii) SVS has determined the onset of various medical conditions before they could be confirmed by other diagnostic tests. SVS has determined medical conditions which were subsequently confirmed by conventional tests e.g. the early-onset of pancreatic cancer in a lady who subsequently died, 1-2 years later, of pancreatic cancer. Other similar case studies can be provided if necessary. (iv) Conclusions made by Russian medical researchers (see attached reports) indicate that the SVS technology is 2-23% more sensitive than contemporary diagnostic techniques and that the SLT (Light Therapy) is typically 83-96% effective. This is at the level which we could reasonably expect if, indeed, the technique is able to determine the onset of conditions from their pre-symptomatic origins and that it is, as claimed, based upon a mathematical relationship between colour perception and pathologies. (v) The technique has routinely been demonstrated on various occasions since 2003 and always provides the expected results i.e. the known medical indications which were not disclosed to us prior to the test. (vi) On several occasions the results of the technique were challenged by medical doctors and/or by medical testing. The outcome was that Virtual Scanning was proven to be correct and the medical diagnosis by the GP was incorrect. These cases have been reported in our bibliography, case studies, etc. On one occasion the patient obtained a compensatory payment for the GP's misdiagnosis. (vii) The

observations made by this technology are theoretically sound i.e. that it fills the criteria for a 'mathematical model of the autonomic nervous system and physiological systems' and explains 'the hitherto unresolved relationship between cognition and cellular & molecular biology'. (viii) The technique has been able to track the onset and progression of a 'migraine' signal until eventually the patient suffered from a migraineous event.

What are the benefits it can offer for each group?

Strannik technology offers a number of significant benefits by comparison with contemporary methods of diagnosing and treating disease e.g.

- SVS is able to determine the onset and progression of pathologies earlier (from the presymptomatic level), better (both genotype and phenotype are defined for each pathology), more comprehensively (circa 5-15 pathologies are determined in each of 32-33 organs), faster (results in circa 15 minutes), and more safely (non-invasive technique) than contemporary methods of testing and diagnosing disease.
- SVS and SLT will be offered at a price which will ensure that there is a significant level of cost-saving to the health service and patient. It will be priced at typically 25-75% of the cost of competitive technologies. The price will be set at a level which is appropriate for each market.

SVS is able to determine the onset of a pathology from its presymptomatic origins i.e. earlier than any other technology. It is able to determine the genetic and phenotypic processes which participate in most pathologies and it can determine the complex range of pathologies which are involved in most medical conditions. It does so in a test of circa 15-30 minutes duration, non-invasively, and at significantly lower level of cost than contemporary diagnostic techniques. It is also able to provide a unique light therapy which has the potential to significantly improve the health of patients. In addition, the technique can be used predictively to establish the range of pathologies which will emerge in future of the patient continues with their current lifestyle i.e. does not alter their unhealthy lifestyle. This will reduce the need for repeat consultations in primary care, for medical tests, for expensive screening technologies, for surgical procedures in secondary care, and conceivably reduced demand for organ transplants. It will improve the accuracy of drug prescribing, reduce waiting lists for medical treatment, etc. Such technology has the potential to contribute to a better understanding of the many and various morbidities; to improve therapeutic outcomes, to improve Quality of Life indices, and to massively reduce the cost of providing healthcare.

Finally, in an era where there is an immense shortage of suitably trained doctors, this technology should dramatically improve the efficiency of the healthcare system i.e. enable the current numbers of doctors to provide a better and more efficient service.

What is the Origins of this technology/History?

Strannik Virtual Scanning and Strannik Light Therapy has its origins in a programme of laser research conducted by Dr I.G.Grakov whilst at University of Novosibirsk in the early 1980's. He identified a biological response to wavelengths of light. It was from such beginnings that Strannik technology was developed.

Further information about this technology has been published in an extensive bibliography of over 50 articles which have been published in peer-reviewed medical journals (see uk.linkedin.com/pub/graham-ewing/44/386/214)

The technology is approved in Russia as a software technology and in the UK has been registered as a type 1 medical device (subsection Z301 - standalone software) under the Medical Devices Directive which enables us to affix the CE-mark. In the US market the technology appears to be an FDA510(k) Class 1 and Class 2 exempt technology.

Contact:

Graham Ewing, Chief Executive

Mimex Montague Healthcare Limited, Mulberry House, 6 Vine Farm Close, Cotgrave, Nottingham, United Kingdom NG12 3TU

tel: (0044)-115-9890304 / 9899618 / fx 9899826 / mob (0044)-7885-755847



email: graham.ewing@montague-diagnostics.co.uk;
graham.ewing@montaguehealthcare.co.uk; Skype: quemaco1

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