

Post Trauma Chronic Resisting Disabilities and Conditions, Posture Deficiency,
Sensory-Motor & Cognitive Rehabilitation, Performance Restoration & Optimization

Established in Vancouver, B.C., since 1997, the Clinic provides specialized medical neurophysiological and functional acupuncture assessment, monitoring and treatment protocols. These blend both Eastern and Western Medicines to achieve excellent measurable results for both acute and chronic conditions. This expertise is based on sensory-motor and cognitive controls dysfunction analysis within the central nervous system. These central dysfunctions may result from injury, trauma, shock, stress, overexertion or exposure to toxic substances or environmental constraints. Our background includes medical, cognitive and behavioral Neurosciences, Traumatology, Aerospace Medicine, Sports Medicine, and Traditional Chinese Medicine.

Specific Pre-Treatment Suitability & Monitoring Assessment Protocols

Brief Introduction

The NeuroKinetics Clinic is specifically set up to effectively address chronic complex trauma conditions shown to be plateaued and resistant to other treatments for at least six months. Multi-lens assessment and drugless treatment protocols are both provided to young, adults and elderly patients from all walks of life and professions. All health care professionals including medical doctors as well as law firms and insurance companies greatly benefit from the various sets of measurable data and the analytical precision and tools provided.

The preliminary pre-treatment general consultation and suitability assessment [NK-GC/SA-1] is designed to identify the cause(s), degree(s), and patterns of chronic symptoms and functional incapacitation and to evaluate the potential for treatment that could effectively address given conditions and allow patient to fully and safely resume professional and favorite activities as soon as possible.

In summary, the complete NeuroKinetics assessment protocol firstly consists in an initial “triage” evaluation including a general orientation/discovery consultation (the “NK-GC”, 1 to 2 hours) including review of previous medical data, and physical, mental and behavioral examinations performed along a thorough interview. This session is immediately followed by a distinct suitability assessment (the “NK-SA”, 45 to 60 minutes) specific to the neurophysiological condition identified during the “GC” phase and also specific to the array of treatment modalities we routinely use. This initial entire investigative evaluation process requires 2 to 3 hours depending complexity to collect, measure and analyze all the biomedical and neurophysiological cues and data necessary to perform a proper conclusive assessment leading to the decision to pursue or not further investigation towards using effective treatment capabilities.

The second and third steps of the whole assessment respectively include the “Level II Assessment” protocol (the “NK-AL2”), and “Level III Assessment” protocol (the “NK-AL3”). In order to ensure valid data comparison, the interval of time between these three sessions should be from one up to five days at most.

These three stages, of equal duration and format, differ only in being increasingly in-depth and complex, as they chronologically address, identify, evaluate and measure brain controls functional status variability underlying patient’s physical, mental and behavioral symptoms and incapacitation as follows:

1. NK-GC/SA-L1 – Address the core sensory-motor and cognitive controls and central neural mechanisms involved in the patient’s condition. Focus is on testing the involved neural pathways, connections, and physiological mechanisms that directly relate to the central neural sensory-motor and cognitive controls located in the brain. *The primary objective of GC/SA is to identify if the patient’s condition appears to be adequately responsive to proven effective therapeutic stimulations, hence treatable, or not. This first step is considered as the “triage and suitability” time.* Assessment duration: 2 to 3 hours.
2. NK-AL2 – Address the quality of relationship between these neural pathways, connections and the underlying central neural mechanisms and the patient’s alleged symptomatology and functional disability or incapacitation, i.e. how the reported symptoms and loss of function match the clinical tests findings. *The primary objective of A2 is to identify the degree of involvement and responsibility of brain dysfunction or injury in patient’s alleged symptoms and disabilities. This second step is considered as the “causation analysis” time.* Assessment duration: 3 to 5 hours.
3. NK-AL3 – Address the generic brain functional status’ consistency and discrepancies through time as well as study the variability of particular brain sensory-motor and cognitive controls’ response patterns. *The primary objective of A3 is to identify the reliability, and stability of the brain controls’ synergy and compensation strategies, and how these may be affected by repetitive and sustained corrective stimulation, i.e. during the treatment strategy specifically determined after these data are all collected and compared. This third step is considered as the “treatment program design” time.* Assessment duration: 3 to 4 hours.

In principle, the GC/SA “triage testing” protocol as well as the next two sequential AL2 and AL3 testing protocols are specifically used towards identifying the core layers and the degrees of brain controls’ hierarchy dysfunctionality and evaluating their respective functional status against identified brain related neural damage patterns. This comparative analysis process is conducted for each of the central neural systems and related peripheral pathways and tissues recognized for substantiating this patient’s current symptoms, disabilities and incapacitation.

All test parameters are measured before and under neurophysiological acupuncture stimulation and both sets of data are compared to evaluate their variations against recognized measurable norms. Even initial data collected during this first phase may allow predicting measurable gain and recovery regarding symptoms and functional disabilities and incapacitation that can be expected from adequate treatment under given treatment related requirements as well as the condition of satisfactory patient’s compliance.

Stimulations selected during the assessment to sensitize the brain controls mechanisms and related systems found to be relevant with the patient’s condition include subliminal non-invasive drug-free physical stimulation provided by a patented biophotonic device, categorized as a Class 1 medical device in the Health Canada classification of the medical technologies.

All components of this multi-system approach to assessing brain functional performance in incapacitated patients have been published upon in specialized international medical and scientific literature. Please refer to the attached literature bibliography.

Regarding a typically unstable plateaued post-trauma condition, such as post-concussion syndrome [PCS], the NeuroKinetics pre-treatment assessment protocol performed may include a comprehensive and precise evaluation of specific biomedical and neurophysiological (primarily sensory, motor, and cognitive) key markers regarding well identified brain controls’ calibration and tune status relevant with:

1. Static vertical postural stance controls
2. Space/body relationship and perceptual controls
3. Eye-hand-postural binocular/monocular synergistic transitional coordination controls
4. Eye movements and ocular-visual convergence and perceptual controls,
5. Computerized stabilometric measure of postural balance control [sensitized vertical stance]



Peer-reviewed Bibliographical References on the Assessment Methodology Used [Excerpts]

Papers

1. 2009 *"Cardio-Postural Deconditioning: a Model for Post Flight Orthostatic Intolerance"*, Blaber A.P., Landrock C.K., **Souvestre P.A.** – *Resp. Physiol. Neurobiol.* 169(Suppl 1):S21-S25
2. 2009 *"Cardio-Postural Interaction: Relationship to Altered Post Flight Cardiovascular and Postural Controls"*, Blaber A.P., Landrock C.K., **Souvestre, P.A.**, submitted to *J. of Respiratory Physiology & Neurobiology*, in "Selected Proceedings of the 2008 Cardiovascular Workshop in Strasbourg", MS-RESPNB1128
3. 2008 *"New Paradigm for Understanding In-Flight Decision Making Errors – A Neurophysiological Model Leveraging Human Factors"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K., *Hippokratia* 2008, 12, (Suppl.1): 78-83
4. 2008 *"Reducing Incapacitating Symptoms during Space Flight – Is Postural Deficiency Syndrome an Applicable Model?"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K., *Hippokratia* 2008, 12, (Suppl.1): 41-48
5. 2008 *"Space Motion Sickness: The Sensory-Motor Controls and Cardiovascular Correlation"*, **Souvestre, P.A.**, Blaber A. P., Landrock C. K., *Acta Astronautica*, 63 (2008), Pages 745-757
6. 2007 *"Space Motion Sickness: The Neurophysiological Connection"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K., *The Chinese Journal of Space Medicine and Medical Engineering*; ISSN1002-0837.
7. 2007 *"Biomedical-Performance Monitoring and Assessment of Astronauts by Means of an Ocular Vestibular Monitoring System"*, **Souvestre, P.A.**, Landrock C. K., *Acta Astronautica*, Volume 60, Issues 4-7, 313-321. doi:10.1016/j.actaastro.2006.08.013
8. 2007 *"Whiplash Associated Disorders and Patient Traumatic History – A Correlation between Traumas, Symptoms and MVAs"*, Landrock C.K., **Souvestre, P.A.**, April 2007, *J. of Whipl. & Relat. Disorders*, Vol.5, No.2
9. 2006 *"Space Flight Biomedical Deterioration Prevention and Correction Using Biophotonic Technology: From Postural Deficiency Syndrome to Space Adaptation Syndrome"*, **Souvestre, P.A.**, Landrock C.K., *SAE 2005 Transactions*, Vol. 114, *Journal of Aerospace*, 2005-01-2762, 13-25, ©SAE 2005
10. 2004 *"Posture and Gait Control Enhancement using Dermal Optical Sensitivity"*, **Souvestre, P.A.**, Landrock C.K., *Journal of Aerospace*, ©SAE 2004
11. 2004 *"A Prescreening Methodology for Proactively Reducing Human Error Proneness"*, **Souvestre, P.A.**, Landrock C.K., *Journal of Aerospace*, ©SAE 2004
12. 2001 *"From Head Concussion to Functional Autonomy and Maximized Performance. A Drugless Neurophysiological Approach to Central Sensory-Motor & Cognitive Restoration"*. **Souvestre, P.A.**, Rothe R.O., Pederson D.L., *Br J Sports Med*; 2001; 35:367-377
13. 1994 *"Remote Measurement of the Thermic Mapping of Skin Surface"*, Marignan M., **Souvestre, P.A.**, Chezeaux J.C., Bismuth W. *Innov. Tech. Biol. Med.* 15(2): 239-244
14. 1993 *"Neurophysiopathogenic Aspects of the Postural System"*. **Souvestre, P.A.**, Michot G. *Archives des Mal. Prof., de Méd. du Trav.et de la Sécurité Sociale*, 54(8): 678-680
15. 1990 *"How to Reconcile Scuba Diving with Parachuting"*, Vanuxem P., **Souvestre, P.A.**, *Med. and Hygiene*, 48: 2136-2141
16. 1984 *"The Influence of Sustained High-level Gz+ Forces on Some Cardio-Vascular and Biological Parameters in Flight Test Operations"*, **Souvestre, P.A.**, Thesis, State Medical Degree, Faculty of Medicine, University of Aix-Marseille II, France

International Invited and Keynote Presentations and Lectures

1. May 30, 2010 *"The Parkinson's Patient: Disease, Syndrome, or Parkinsonism? Fundamentals, Classics and Updates"* - **Souvestre P.A.**, Keynote, NeuroKinetics Institute, Vancouver, BC, Canada, for the National Traditional Chinese Medicine Association of Canada
2. April 28-30, 2010 *"Blending Neuroscience and Naturopathic Medicine - A Multidisciplinary Integrative Approach to Human Incapacitation and Performance Recovery"*. **Souvestre P.A.**, - Keynote, The 2010 Okanagan BrainTrust Canada Conference, Naramata, BC, Canada
3. April 28-30, 2010 *"An Integrated Approach to Understanding and Preventing Falls"*. **Souvestre P.A.**, Keynote, The 2010 Okanagan BrainTrust Canada Conference, Naramata, BC, Canada
4. November 12, 2009 *"From Injury to Assessment and Treatment – "Innovative Medical Approach to Sensory-Motor and related Cognitive Controls Dysfunction and "CardioPost" Integrative Model"*. **Souvestre, P.A.**, - Invited lecture, EUROMOV, Prof. Bardy's Research Group, University of Montpellier, France
5. November 09, 2009 *"A Multidisciplinary Approach to Human Incapacitation and Performance - A Medical Approach to Sensory-Motor Controls Dysfunction From Injury to Assessment and Treatment"*. **Souvestre, P.A.**, Blaber A.P. – Invited lecture, Laboratory for Cognitive Neurosciences (Prof. Alain Berthoz), Collège de France, Paris, France
6. July 2008 *"A Novel Multidisciplinary Approach to Treating Human Incapacitation"* – **Souvestre, P.A.**, Keynote lecture, Inter departments seminars, Guang An Men Hospital, Beijing, PRC
7. May 26, 2008 *"A Multidisciplinary Approach to Human Incapacitation and Performance"* – **Souvestre, P.A.**, Canadian Delegate Communication, BC Life Sciences Research and Innovation Summit, BC Pavilion, Beijing, China
8. May 3, 2008 *"The Practice of Sports Acupuncture - Key Paradigms to Leverage Human Performance"* - **Souvestre, P.A.**, Seminar, Canadian Memorial Chiropractic College, Toronto, ON, Canada
9. Dec 2007 *"A Multidisciplinary Approach to Trauma Assessment and Treatment"* – **Souvestre, P.A.**, Keynote lecture, Inter departments seminars, China-Japan Hospital, Beijing, PRC
10. Sept 2007 *"New Paradigms to Understanding Human Incapacitation and Performance"* – **Souvestre, P.A.**, Invited lecture, School of Aerospace, Tsinghua University, Beijing, PRC
11. Sept 2007 *"New Paradigms in Trauma Neurophysiology – Application to Human Performance and Motion Space Sickness"*, **Souvestre, P.A.**, Keynote lecture, Aerospace Biodynamics Dept, 4th Military Medical University, Xi'an, PRC
12. May 20, 2007 *"MSP Coverage for TCM Acupuncture in BC"* Cheung M., Hu H., Lee J., **Souvestre, P.A.**, Vallee C. – Invited Expert communication, Provincial Government of BC, Medical Caucus, Victoria, BC, Canada
13. May 12, 2007 *"On the Review and Rationale of the Practice of Legitimate Medical Techniques According to TCM - Oriental Medicine & TCM – Oriental - European Acupuncture Paradigms In respect to the Regulation of the TCM and Acupuncture Scope of Practice"*. Keynote presentation, **Souvestre, P.A.**, Chairperson's Reception, CTCMA of BC, Vancouver, Canada
14. Nov 22-23, 2005 *"Human Performance and Safety in Military and Flight Operations. Neurophysiological Considerations on Night Vision Technology"* – Invited Expert communication, **Souvestre P.A.**, Landrock C.K – Night Vision Seminar, Dept. of National Defense, CFB Comox, Canada
15. March 2001 *"On Occupational Injury & Recovery Maximization - NKHS Updated Statistics from Vancouver, BC, Canada"* – **Souvestre P.A.**, Invited lecture, Association des Services Médicaux du Travail, Bâtiment & Travaux Publics des Bouches du Rhône, Aix en Provence, France
16. May 1999 *"From Health to Illness. Journey towards NeuroKinetics"* – **Souvestre P.A.**, Invited lecture, Association of Complementary Physicians of BC, AGM, Vancouver, BC, Canada
17. Sept 5-7, 1996 *"From Neurophysiology to Naturopathic Medicine"* – **Souvestre P.A.**, Keynote lecture, BC Naturopathic Association, Vancouver, BC, Canada

Presentations at Provincial, National & International Conferences and Symposia

1. June 15-17, 2010 *"Plantar biophotonic stimulation improves ocular-motor and postural control in motor vehicle accident patients"*. Garg, A., Bruner, M., **Souvestre P.A.**, Blaber A.P. – Oral, 33rd Canadian Medical and Biological Engineering Society Conference, Vancouver, BC, Canada
2. May 3-7, 2010 *"Biophotonics - An Innovative Prognostic Tool. Countermeasure for In-Flight Incapacitation Associated with Central Sensory-Motor Controls Dysfunction"*. **Souvestre, P.A.**, Blaber A.P, Landrock C.K. – Oral, 81st Annual Scientific Conference, American Aerospace Medical Association AGM, Phoenix, AZ, USA
3. Feb 26-28, 2010 *"Can Loss of Spatial Reference Link Concussion to Both Anxiety and Gait Disorders? Introducing a Predictive Integrative Assessment Model"*. **Souvestre PA.**, Garg A, Blaber AP. Poster, 3rd Int'l Congress Gait & Mental Functions, Washington, DC, USA
4. Nov 12-15, 2009 *"Cardio-postural interactions: Wavelet analysis of gastrocnemius electromyographic activity and blood pressure variation with respect to postural sway during quiet stance"*. Blaber A.P. Garg, A., **Souvestre P.A.**, Oral, Federation of European Physiological Societies Meeting, Ljubljana, Slovenia
5. July 23-25, 2009 *"Relationship between Gastrocnemius Electromyographic Activity and Blood Pressure Variation with respect to Postural Sway during Quiet Stance"*. Garg, A., **Souvestre P.A.**, Robinovitch S.N., Blaber A.P. Poster, Progress in Motor Control VI, Marseille, France, EEC
7. May 3-7, 2009 *"New Approach to In-Flight Incapacitation Occurrence - A Correlation with Two Classic Trauma Models: Post-Traumatic Stress Disorder (PTSD) & Postural Deficiency Syndrome (PDS)"*, **Souvestre, P.A.**, Blaber A.P, Landrock C.K. – Oral, 80th Annual Scientific Conference, American Aerospace Medical Association, AGM, Los Angeles, CA, USA
8. August 24 – 26, 2008 *"Predicting Trauma Recovery Gain – Use of Biophotonics to Identify Dysfunction Reversibility in Central Sensory-Motor Controls and related Cognition"*, **Souvestre, P.A.**, Jin Zhen, Liu Gang, Landrock C.K., 6th Asian Pacific Aerosp. Med. Conf., Xi'An, P.R.C.
9. May, 2008 *"New Paradigm for Understanding In-Flight Physiological and Cognitive Deterioration – Brain Hypoxia Links to a Neurophysiological Trauma Mode"*, Blaber A.P, **Souvestre, P.A.**, Landrock C.K. – Poster, American Aerospace Medical Association AGM, Boston, USA
10. April 4 – 6 , 2008 *"Cardio-Postural Interactions and Aging"*, Blaber A.P, **Souvestre, P.A.**, Landrock C.K., Experimental Biology 2008, San Diego, USA
11. Feb 26, 2008 *"Measuring Open and Close Loop Strategies of Postural Control in Amateur Hockey Players"*, Landrock C.K., Blaber A.P, **Souvestre, P.A.**, – Poster, Western Canadian Conference on Environmental Ergonomics and Physiology, SFU, Burnaby, BC, Canada
12. Feb 26, 2008 *"Reducing In-Flight Incapacitation – New Paradigm to Leverage Human Performance By Sustaining Space Perceptuality and Balance Control"* , **Souvestre, P.A.**, Blaber A.P., Landrock C.K. – Oral, Western Canadian Conference on Environmental Ergonomics and Physiology, SFU, Burnaby BC
13. Aug 29 - Sept 3, 2007 *"New Paradigm for Understanding In-Flight Decision Making Errors – A Neurophysiological Model Leveraging Human Factors"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K. – Oral, Paper, 5th GASMA International Meeting of Aerospace Medicine, Skiathos, Greece
14. Aug 29 - Sept 2, 2007 *"Reducing Incapacitating Symptoms during Space Flight – Is Postural Deficiency Syndrome an Applicable Model?"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K.– Oral, Paper, 5th GASMA International Meeting of Aerospace Medicine, Skiathos, Greece
15. Aug 29 - Sept 3, 2007 *"Integrative Sensory-Motor Controls Status Assessment Methodology – Proposed Applications in Aerospace"*, **Souvestre, P.A.**, Blaber A.P., Landrock C.K.– Poster, 5th GASMA International Meeting of Aerospace Medicine, Skiathos, Greece, EEC

